open data in Armenia

report

CRRC
Armenia

Open Data in Armenia

report

"Enhancing the Democratic Achievements of Armenia through Open Data" project

Yerevan 2021

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We are also grateful to the participants of the project's training sessions and the organizations and structures they represent. The writing of this report was possible through their invaluable contributions in discussion sessions, also aiding the improvement of our work. We strongly believe that participatory generation of new ideas and concepts is the most efficient way when moving forward in the development of strategic projects in the future.

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Preamble

"Open Data in Armenia" report covers the key results of the project "Enhancing the Democratic Achievements of Armenia through Open Data", implemented by the Caucasus Research Resource Center (CRRC)-Armenia Foundation between June 2020 and September 2021, financed by Sweden.

The project was aimed at supporting Armenia's transformation process by making quality data on political, social and economic processes available, and by engaging key state and non-state actors, and media representatives in its use, analysis, dissemination and application in policy-making. Hence, in this report, CRRC-Armenia shares its major achievements accomplished through the project activities. We also reflect upon some valuable insights that we arrived at together with our stakeholders. The combination of project results and relevant recommendations has a significant potential to pave the way for the multiplication of project outcomes in the short run, and ultimately the promotion of culture of open data in Armenia.

The current report consists of three main sections. The first section presents the framework of the project, as well as its goals, implemented activities, and outcomes. The second section captures the current state of affairs from the perspective of relevant legislation, and through the perceptions on open data among the target groups of this project. The third and final section draws on a number of practical and policy recommendations for fostering the open data culture in Armenia.

The report ends with two appendices which present the proposed concepts by the project stakeholders, and the list of acronyms used throughout this report.

Section 1.
Contextualizing Open Data

1.1. Problem Statement: Open Data Framework

In a post-Velvet-Revolution, post-war and Covid-affected Armenia, an analytical mind and new skills are required to be able to prioritize and properly gather, archive, use quality, research-driven data, present the data in a visualized and easy-to-understand way.

Every day, dozens of new data, reports, statistical spreadsheets, law amendments, and other types of documents are being publicized. On the one hand there is an enormous amount of information that necessitates new skills to prioritize, analyze and provide ground-based information to be used in their investigations, anti-corruption and public control-related articles/broadcasts, coverages, etc. On the other hand, this is an adaptation period for the stakeholders, key actors to the new situation created by the political changes and they need upgrading of their relevant capacities.

Hence, now, more than ever, it is crucial to invest in transparency and accountability in governance on the way to successful democratization. For this, a highly improved evidence-based policy making needs to come to play, and CRRC-Armenia believes open data is a central component to this.

Data is considered open if anyone is free to access, use, redistribute, modify and share it. Open data is in the public domain or provided under an open license allowing it to be downloadable without monetary or other restrictions and has a format which can be processed by an open-source software tool[1]. Open data must be (1) complete - digitally available to the maximum extent possible; (2) primary - collected at its very source; (3) timely - released as early as possible; (4) accessible to the widest possible audience; (5) machine-processable; and (6) non-discriminatory - available to anyone without access control.

The concept of making data freely available for the common good originated in academic circles, and spread to encompass all other spheres[2]. It has been influenced by concepts of open government, freedom of information laws, as well as initiatives for promoting economic growth, efficiency, transparency and democratic participation.

The long-term investment in open data infrastructures and ecosystems is fundamental to its impact and future success. From the point of policy development, the central drivers at play are civil society, mid- and top-level public servants, and the media. However, users of supplied data also play a fundamental role in the improvement of its quality and flow, as well as producing data themselves[3]. This should ideally contribute to the process of democratization.

Data-driven democratization is the idea that digital information should be accessible and understandable to the average end-user as a basis for decision-making[4]. This entails the opening up of data by default, and the fostering of participation and inclusion, and promoting cooperation of users. Data as contributing to democratization in this sense is both the supply of data by providers, and its broader utilization by users.

The public sector needs to utilize the power of user-generated content to be productive and effective in creating public goods. The reform of public services is not only about efficiency and reliability but also about making them communal and collective, which means inviting and encouraging cit-

1. "Open Definition 2.1." Open Definition, Open Knowledge Foundation, https://opendefinition.org/od/2.1/en/.
2. Chignard, Simon. A Brief History of Open Data. 29 Mar. 2013, www.paristechreview.com/2013/03/29/brief-history-open-data/. Accessed 22 May 2020.
3. Chui, M., Farrell, D. and Van Kuiken, S. (2013). Generating Economic Value through Open Data. In: B. Goldstein and L. Dyson, eds., Beyond Transparency. San Francisco, CA: Code for America Press, pp.163–172.
4. OECD (2018), Open Government Data Report: Enhancing Policy Maturity for Sustainable Impact, OECD. Digital Government Studies, OECD Publishing, Paris. https://doi.org/10.1787/9789264305847-en, p. 90

izens to participate. Open data in this sense is an invitation and entails the rise of user-friendly public data[5].

Building on this, CRRC-Armenia has always strived to be a pioneer in opening up its collected data for all research projects and by providing opportunities for utilizing its resources for further exploration by the research community in Armenia and beyond.

1.2. Our Approach

Project Scopes

It is apparent that single programmatic interventions are not capable of fully addressing the issues of open data and data democratization. However, it is vital to establish grounds for raising these issues, networking among target groups and their stakeholders and joint decision-making as to how these issues can be addressed recurrently.

Given this, CRRC-Armenia designed a project that would specifically support the democratization of Armenia through increasing the capacities of representatives of state/non-state actors and the media in data collection and analysis, and the use of data in decision-making and demand for accountability and transparency. Henceforth, the main goal of the project was to foster the achievement of democratic values of the social and political transformation in Armenia through enhancing effective and targeted utilization of open data with a broader range of competent stakeholder accessibility that represent diverse institutions of state and non-state actors.

In doing so, we chose to explicitly target certain groups of stakeholders. In particular, the following seven target groups were singled out: (1) Demographers/Statisticians; (2) Academicians; (3) Media; (4) CSOs; (5) Think tanks; (6) Local government; (7) Central government. These target groups were selected as key figures that can impact the development of open data ecosystems in Armenia and create inclusive partnerships for promoting a sustainable culture of using open data as policy makers, implementers and researchers.

5. Coleman, E., (2013). Lessons from the London Datastore. In: B. Goldstein and L. Dyson, eds., Beyond Transparency. San Francisco, CA: Code for America Press, p. 45.

CRRC-Armenia set an objective to empower the project target groups from Yerevan and all other ten provinces of Armenia with a comprehensive and standard package of instrumental tools evolving their capacities of data collection, data processing, as well as targeted and diversified use of data.

In order to meet both the broader goal of the project and the defined objective, we planned a set of activities that were carried out in an inter-connected manner. Through the planned activities, we attempted to explore the challenges of the development of open data in Armenia through participatory discussions and capacity-building trainings. These had a special focus on understanding the progress and issues in accessibility of information and its use by various stakeholders for the public good.

Project Results

The following table captures the main activities implemented within this project, as well as the respective outcomes and outputs thereof.

Activities	Outcomes	Outputs
ACTIVITY 0 Action Planning	An Action Plan was developed upon the launch of the project, mapping out the expected activities within the project, such as internal mobilization within CRRC-Armenia to deliver workshops on the use of tools for data analysis, logistical aspects of implementing the project, and the recruitment of experts and participants for the capacity-building component, follow-up activities, a closing forum and the preparation of the evaluation report.	Action Plan developed[6]
ACTIVITY 1 Open Source Mapping	CRRC-Armenia began the project by identifying available open sources containing information on key social, economic and political indicators pertaining to Armenia. Activities began in June 2020. CRRC	Open Sources Map published on crrc.am[7]

6. Circulated internally
7. Available for public from the beginning of 2022

	searched for open sources among the Armenian state agencies and international organizations. The Open Sources Map is now part of the CRRC-Armenia website (scheduled to become available to users from the beginning of 2022), allowing users to access data collected by the state of Armenia on various themes. The tool allows the users to add new sources to the existing database, thus promoting the idea of participatory creation/accumulation of data, which is one of the main features of open data politics.	
ACTIVITY 2 Recruitment	Experts were recruited through open calls and headhunting to develop trainings until the beginning of March 2021. Simultaneously, an open call for trainees was announced and the selection and formation of training groups from the target groups was initiated. The selection process of trainees was ongoing through the capacity building process during March through April 2021. CRRC-Armenia received around 150 applications in total from all target groups.	• 3 experts hired (joined by 4 CRRC in-house experts) • 70 trainees recruited
ACTIVITY 3 Capacity Building Trainings	Being the main project activity, the capacity building trainings were implemented during March-April 2021. Training sessions lasted between three and four days for the target groups based on their line of work and availability. Experts adjusted the teaching sessions and relevant materials based on the interests and areas of specialization of the trainees for each session, while trainings maintained their overall structure. Participants were introduced to open data, its sources, legal and technical characteristics, its producers and users, and stages of its realization. Trainees also participated in the examination of existing local works in Armenia. Furthermore, the	• 7 training sessions (3-4 days each) delivered • 10 proposed concepts[8]

8. See Appendix 1

	importance of visualization of data for better communication with stakeholders was tackled. Additionally, practical sessions were held on extracting data from the web and creating data visualizations. As participatory concept development was an important part of the project, discussions and exercises were based on the Armenian context. Discussions and project development sessions were held to gauge participants' understanding of the feasibility of a developed open data culture and sector in Armenia. Analytical skills and concept development with the trainees had a multiplier effect for the goals of the project, attracting actors from state and non-state bodies to work towards common ideas in broader spheres associated with open data.	
ACTIVITY 4 Stakeholder Mapping	As part of the concept development component of the project, trainees were asked to participate in a stakeholder mapping exercise to identify central players to consider involving when promoting ideas relevant to Open Data in Armenia. Stakeholder maps shall be revisited for training participants to proceed with the implementation of their proposed concepts and to aggregate available resources and connections in the field in the future.	6 stakeholder matrices created[9]
ACTIVITY 5 Data Collection and Visualization	CRRC-Armenia viewed the training sessions also as an opportunity to collect and visualize data on open data. All capacity building trainings and discussions were recorded, transcribed, and later systematically analyzed[10] from the perspective of perceptions on open data among various stakeholder groups. As a result, visualizations of key associations	• 7 group discussions analyzed • 4 word-clouds visualized[11]

9. See Section 2.2
10. Ibid.
11. Ibid.

	in the form of word-clouds, and stakeholder maps were prepared, portraying the opinions of participants about central topics in Open Data in Armenia.	
ACTIVITY 6 Follow-up Activities	The concepts proposed by the participants of the training sessions were analyzed to be discussed for future projects (expected to be initiated by CRRC-Armenia and the stakeholders of the project). The concepts shall serve as a basis of future collaboration in the field in close cooperation with the organizations and state structures that were represented at the training sessions and that can relate to the questions raised by the project stakeholders.	
ACTIVITY 7 Open Data Forum	A final Open Data Forum was organized on September 18th to conclude the project and gather the trainees and relevant experts and stakeholders in the field to discuss the outcomes of the project and their views on Open Data in Armenia. The forum engaged around 400 participants from numerous areas of specialty. The forum hosted 10 speakers from various fields, such as media, IT, law, science and research. The final session was dedicated to the intersection of open data and protection of personal data, moderated by CRRC-Armenia's CEO Sona Balasanyan, with the participation of the Deputy-minister of Labor and Social Affairs Anna Jamakochyan, the Head of Personal Data Protection Agency Gevorg Hayrapetyan, and the chief editor of Media.am Gegham Vardanyan. The event was held in a dynamic atmosphere, where brief presentations followed each other, receiving a lot of questions from the audience, actively engaged in the discussions.	• Open Data Forum organized[12], with the participation of: • 10 invited speakers • 4 keynote speakers • over 400 attendees

12. See Facebook event page, https://www.facebook.com/events/4303915356311700

ACTIVITY 00 Report Writing	The current report serves as an evaluation for the project and reflects on the challenges and opportunities for open data development in Armenia through the analysis of reflections of the training participants, trainers, and the CRRC-Armenia staff that worked on this project. It serves as a document for providing recommendations for follow-up activities that CRRC-Armenia and stakeholders can undertake to develop further concepts and collaboration in the sphere of promoting Open Data in Armenia.	Final Report developed

1.3. Participant Feedback

At the end of the training sessions, participants were asked to provide feedback on the capacity building modules. The following few paragraphs discuss some of the advantages and limitations of the training sessions, as suggested by participants themselves.

Most participants found the training sessions to be important, practical and informative. As a lasting resource, participants recommended to record all presentations and practical sessions to be disseminated later. Periodically held sessions would be helpful both in online and offline formats. They would include web-scraping and visualization workshops, database creation and management, as well as data collection, processing and analysis. In general, methodological sessions were emphasized as crucial for capacity-building.

As a continuation of the project, participants recommended taking a concrete ministry as a target and working with them for a specific outcome. Participants also suggested holding more trainings aimed at regional civil society organizations and public bodies. Ph.D. students and youth were also mentioned as important target groups. The importance of involving decision-makers in the trainings was also highlighted many times.

Additional sessions for future workshops could be on the functions of local government bodies, interdependence of policy-making and implementation, lobbying and advocacy. Cyber security was mentioned as an in-

creasingly important topic for capacity-building workshops related to data and democratization. Case studies and comparison of Armenia's progress in freedom of information could be done with other countries. Homework for participants such as finding data on a given topic and applying new tools to the information was also suggested. For future projects, evaluation could be held before and after the trainings and practical sessions could be adjusted for beginners and participants with more advanced skills. Long term cooperation was also emphasized. Target groups prioritize lasting cooperation with clearly defined action plans and expected outputs as dissemination of Open Data culture in Armenia shall be an important goal for stakeholders who can achieve results through coordinated action and shared vision.

A challenge in conducting the trainings was recruiting experts that had two key characteristics necessary for carrying out the workshops - a deep understanding of the status of Open Data in Armenia, and familiarity with the features and needs of the target groups. This prolonged the planning and preparation phase for the capacity-building workshops.

In recruiting the participants, diversity of backgrounds in each target group was prioritized. Emphasis was also put on regional structures and organizations. Though these two conditions were satisfied, including representatives from decision-making bodies in future trainings could greatly improve the conversation about Open Data.

In general, more effort could be invested in distinguishing Open and Public data in state agencies and among civil society organizations. For future projects it would be beneficial to demonstrate more examples of what data looks like in different databases, and the way data-producers including technical specialists see and work with data.

Section 2.
Understanding Open Data in Armenia

To understand the main trends in target groups' perceptions on open data and the key players in the field, several project development sessions were held during the trainings. These activities generated visualizations of key concepts in the form of word clouds. Participants also composed stakeholder maps to reveal main actors for future cooperation.

CRRC-Armenia considered the training sessions as an opportunity to collect and visualize data, as well. Hence, all capacity building trainings and discussions were recorded, transcribed, and later systematically analyzed. The analysis of the discussion sessions highlighted three main dimensions of understanding the subject of Open Data in Armenia: (1) democracy and open data; (2) ownership of open data; and (3) security and open data.

Thus, the following subsections present the results of this analysis.

We start by mapping out the relevant legislation in the Republic of Armenia, presented in the section 2.1. This is followed by a thematic analysis of the perceptions on open data, including associations with open data in general, the results of the stakeholder mapping exercise, as well as reflections on open data in all seven target groups, presented in respective subsections.

Each of those subsections, in turn, cover four main aspects, including:

1. democracy and open data;
2. ownership of open data development;
3. security and open data;
4. general issues in the field of data and information.

Paragraphs on **democracy and open data** encompass such concepts as the relationship between transparency and available data, accountability through citizen participation, and opinions about the extent to which open data should be regulated. **Ownership** applies to the different target groups' perceptions on their involvement in delivering the development of open data in Armenia. This concept of ownership not only includes an analysis of participating actors from the perspectives of "data users" and "data producers," but also includes the key players in addressing broader challenges such as demand for better information provision systems, stronger knowledge regarding privacy or information, better analysis of state-produced data, etc. The third aspect highlighted in the report is the **security-open data** axis, which discusses various viewpoints on how compatible these two concepts are, and how they fit into the specificities of Armenia and the region. The final aspect draws parallels between main takeaways from each of the target groups and calls attention to directions for preparing grounds for advancing Open Data in Armenia. Recommendations from each target group are presented separately in Section 3, with a summary of the ideas that participants have offered for future projects in open data, information management, awareness raising, cooperation, etc.

Key concepts: data, information, and public information

In the following sections, the terms "information" and "data" are not used interchangeably. "Information" is used broadly to describe facts or knowledge generated or collected without specific organization or categorization in datasets or restrictions on format. "Data" pertains to structured information that can be manipulated by a computer and should be understood quantitatively. "Public information" does not have such strict legal and technical characteristics, and relates to the information disclosed by an agency for public use without specific form or format.

2.1. Relevant Legislation

One of the key components of the capacity building sessions was the overview of relevant international commitments of Armenia to opening data, as well as legislation related to the field of information. The approach of the project was to look at the legal side of promoting open data through two main lenses - freedom of information and protection of personal information. Below is a list of references applicable to the field of Open Data in Armenia:

Right to Information

- RoA Constitution, Article 51 on the right to receive information; and Article 42 on freedom of expression[13],
- RoA Freedom of Information Law,
- RoA Government decision N 1204-N, Point 6 on information inquiry samples, 2015,

13. Including the freedom to seek, receive and disseminate information and ideas through any media without interference from public and local government bodies, regardless of state borders.

- RoA Code on Administrative Offenses, Article 189 on the failure to comply with the obligation to provide information,
- RoA Criminal Code, Article 148 on the penalty for providing incorrect or incomplete information by an official,
- Universal Declaration of Human Rights, Article 19,
- International Covenant on Civil and Political Rights, Article 19,
- European Convention for the Protection of Human Rights and Fundamental Freedoms, Article 10,
- Council of Europe Convention on Access to Official Documents,
- Committee of Ministers of the Council of Europe Recommendation on "Access to Official Documents", 2002,
- Guidelines of the Committee of Ministers of the Council of Europe on protecting freedom of expression and information in times of crisis, 2007,
- Committee of Ministers of the Council of Europe Declaration on freedom of expression and information in the media in the context of the fight against terrorism, 2005,
- Committee of Ministers of the Council of Europe Declaration on the Protection and Promotion of Investigative Journalism, 2007,
- Committee of Ministers of the Council of Europe Declaration on the provision of information through the media in relation to criminal proceedings, 2003,
- Committee of Ministers of the Council of Europe Recommendation on the provision of information though the media in relation to criminal proceedings, 2003,
- Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, 1998.

Privacy of Information

- RoA Constitution, Article 34 on the Protection of Personal Information,
- RoA Law on Protection of Personal Information,
- RA Code on Administrative Offenses, Article 189.17, on the violation of the RoA Law on the Protection of Personal Information,
- Decision of the RoA Constitutional Court on the compliance of Article 71 of the Law "On State Registration of Property Rights" to the Constitution, 2016,
- Decision of the RoA Constitutional Court on the compliance of Article 4, Point 8, second sentence, and Article 8, Part 3, third sentence of the Law "On Identification Cards" and Article 5, Point 1, Part 10 of the Law "On the State Population Register" to the Constitution, 2015,
- RoA commitments in the scope of Open Government Partnership,
- Council of Europe Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data,
- Council of Europe Additional Protocol to the Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data regarding supervisory authorities and transborder data flows,
- Council of Europe Recommendations on Protection of health-related data (2019); Guidelines to respect, protect and fulfill the rights of the child in the digital environment (2018); the roles and responsibilities of internet intermediaries (2018); the processing of personal health-related data for insurance purposes, including data resulting from genetic tests (2016); the processing of personal data in the context of employment (2015); a guide to human rights for internet users (2014): protection of human rights with regard to social networking services (2013); protection of human rights with regard to search engines (2013); profiling (2010); on the protection of personal data collected and processed for insurance purposes (2002); privacy on the Internet (1999); personal data collected and

processed for statistical purposes (1997); medical and genetic data (1997); personal data in the area of telecommunication services, telephone in particular (1995); communication to third parties of personal data held by public bodies (1991); payments and other related operations (1990); data used for employment purposes (1989); police files (1987); social security (1986); direct marketing (1985); scientific research and analysis (1983); automated medical data banks (1981).

2.2. Perceptions on Open Data in Armenia

Associations with Open Data

In an attempt to understand how the target groups of the project characterized the field of Open Data in Armenia, word clouds were used to reveal the main trends among participants' opinions. These associations are categorized into four main themes: (1) Associations with open data and the information field in Armenia, (2) Current situation, (3) Risks and issues, and (4) Aid in the development of Open Data in Armenia. The word clouds provide an opportunity to inform the research regarding the main perceptions about the field of open data.

Participants associated general democratic values with open data and did not demonstrate negative attitudes towards the concept. However, when describing the current state of open data in Armenia and the field of information, references to issues and challenges were more prominent. These related both to the lack of quality in managing and delivering the data, and the low interest towards open data from stakeholders, including the state, civil society and the public. In addition, there was a direct reflection of the instability of the political, social and economic environment in Armenia, viewing processes towards the development of open data in the country as interdependent with improving other fields.

When considering risks and issues in this field, concerns were associated not only with external threats such as escalation of conflict with all its consequences and cyber-attacks, but also regarding an internal lack of capacity in terms of good governance, education and prevention of brain-

drain. Again, political instability was reflected in the discussion. Lastly, when discussing opportunities and aid for the development of open data in the country, international support and education were critical, as they were linked to democratic commitments, political will and strategic or sectoral development plans.

1. Associations with open data and the information field in Armenia

2. Current situation

3. Risks and issues

4. Aid in the development of open data in Armenia

Stakeholder Mapping

Stakeholder mapping was conducted among the target group participants to understand potential partners for future open data development concepts and projects.

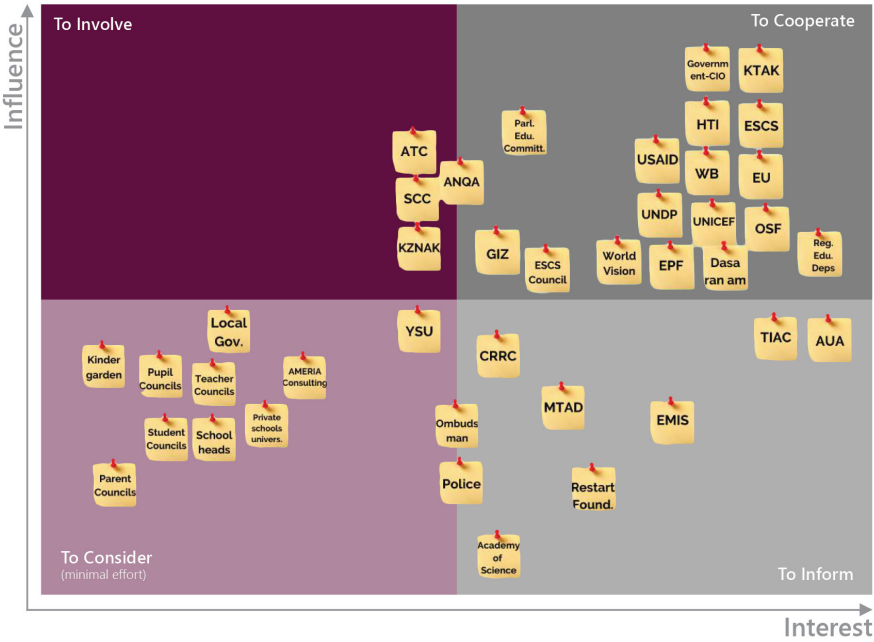
Stakeholder mapping was a visual exercise to identify the most important organizations and individuals who are/can be involved and have/can impact the development of open data culture in Armenia. The aim was to list the actors who could support or participate in spreading open data culture, increasing the transparency of public administration, and implementing projects in this field. The exercise focused on actors who would benefit most from jumpstarting the open data culture or who can contribute to the creation of that culture and will help such actors understand where the relevant resources were concentrated to develop collaborative strategies.

The mapping exercise was conducted with the six target groups in the fall of 2020. These groups included representatives of local think tanks, CSOs, universities, media, local and central governments. Each of the groups created their own matrix map listing organizations, companies, people, and universities, depicting their interest and influence in the field. The matrix is divided into 4 sections: **"To Involve"** - the actor has a potential to develop the field; **"To Cooperate"** the actor has both capabilities and willingness; **"To Consider"** - the actor does not have much potential or interest in the process; **"To Inform"** - the actor may have some indirect influence on the process. Some actors were located in the middle of two sections.

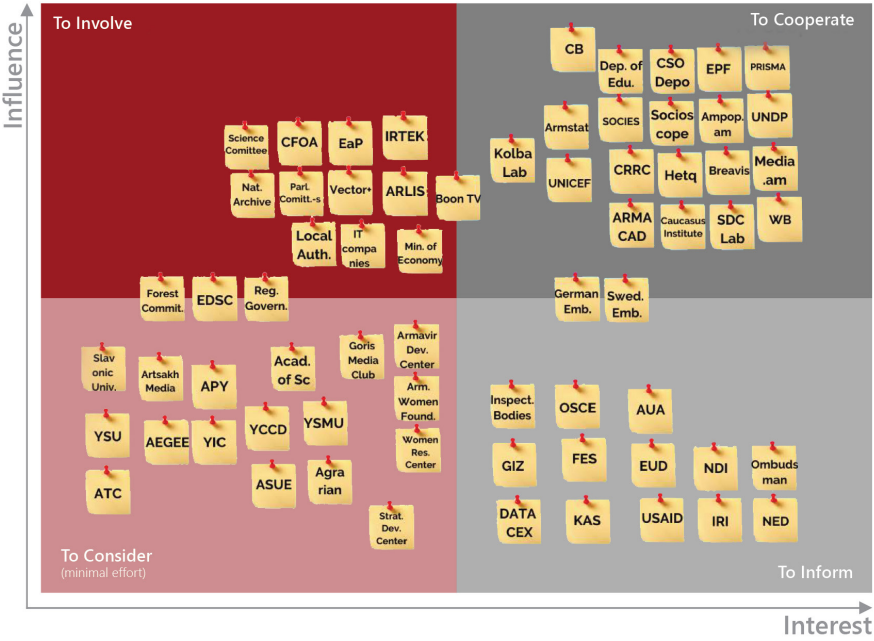
The four groups were given a task to create a matrix listing the actors while keeping in mind organization of any project related to open data. Two of the groups- the representatives of CSOs and academic institutions- were free to choose the project field. For this reason, for example, the matrix of representatives of academic institutions, which was dedicated to strengthening the community and its educational life, is quite different from the others. State and non-state educational and scientific institutions predominate here.

Below are the matrices developed by each target group. Explanations of the acronyms are attached in the appendix.

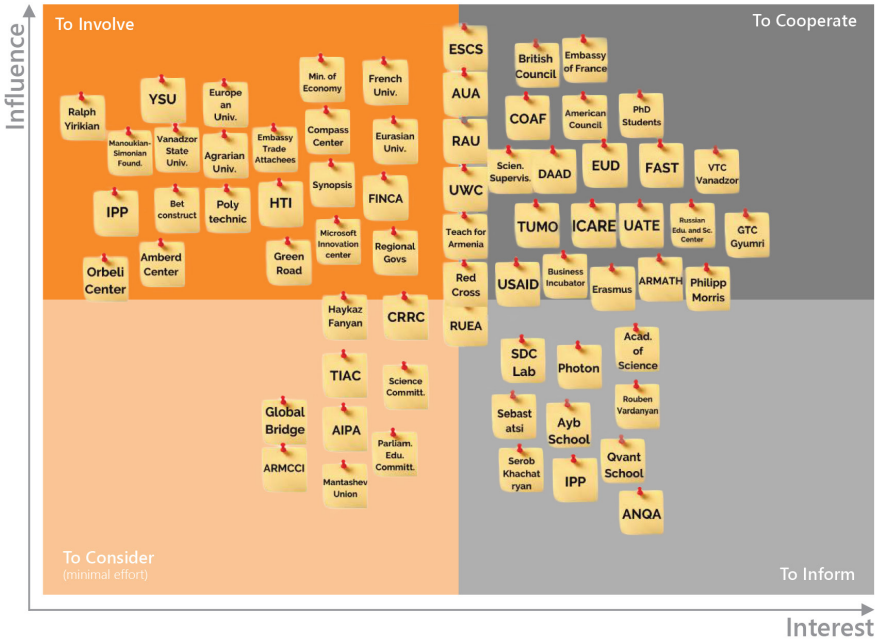
1. Civil Society Organizations



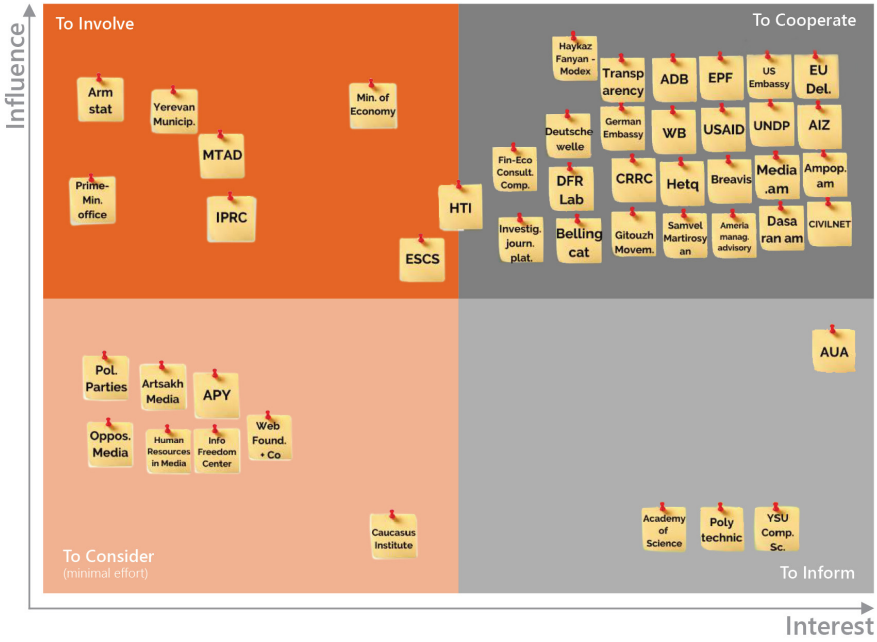
2. Think Tanks



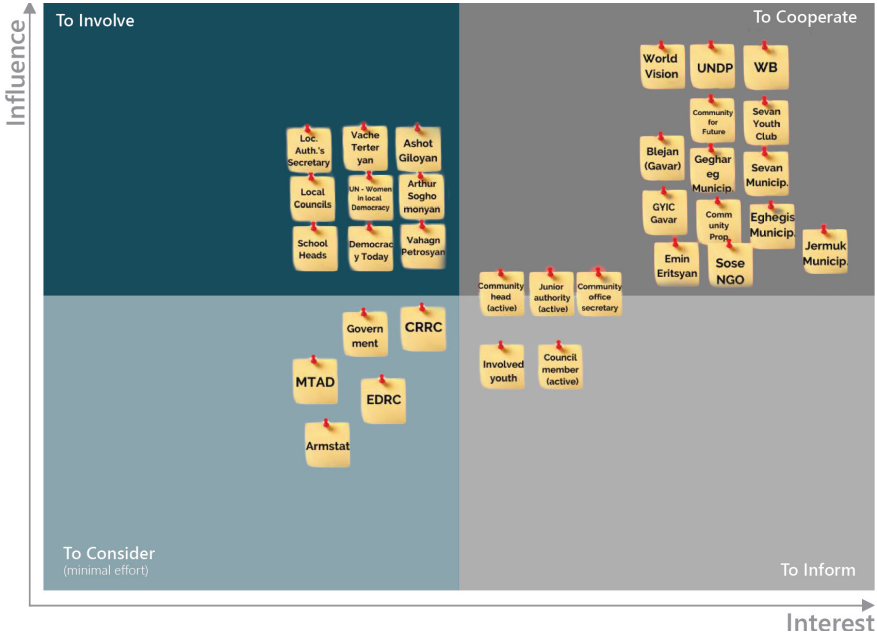
3. Academia



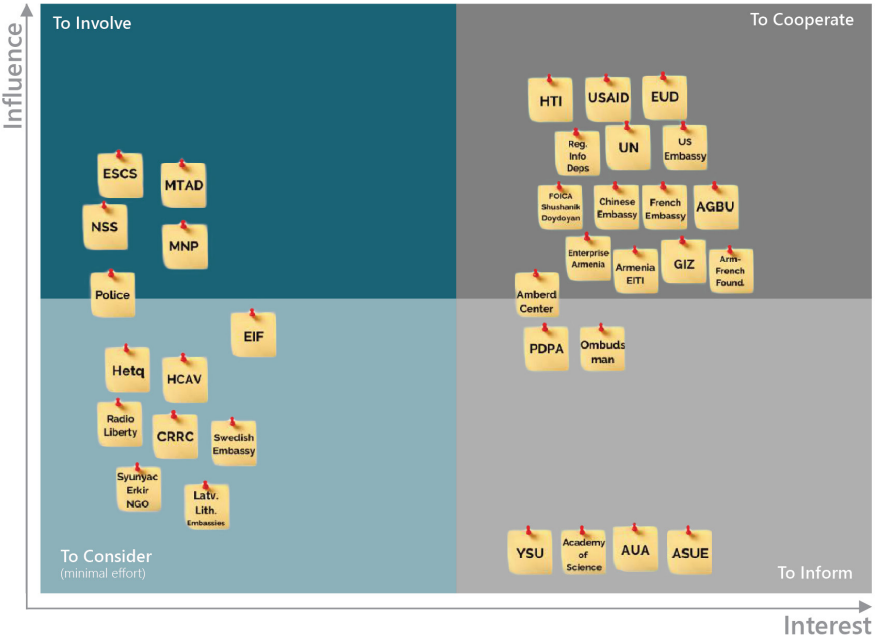
4. Media



5. Local Government



6. Central Government



These 6 matrices reveal 3 common themes: (1). Each group, as expected, primarily mentioned different representatives of their field. (2). Also as expected, governmental bodies have been largely presented in the **"Involve"** section, having great leverage, opportunities, relatively less involvement, and in some cases, interest. (3). Large international organizations, such as the UN, the World Bank, and the EU, were located in the **"Collaborate"** section, having big influence and interest in the development of the field. These were the most common actors in all 6 matrices, alongside some ministries or universities, such as YSU, AUA, etc. At the same time, challenges arose in placing state agencies and legislative bodies in the "correct" box. The dilemma consisted in presenting them as the most important stakeholders with the highest level of power due to the need of state approval and power of will, and the enthusiasm and initiative of these structures when it came to keeping up with development trends.

Thus, the participants of the exercise created 6 matrix maps, gathering a database of actors with opportunity and/or interest in stimulating the process of open data and information field development in Armenia. Participants had the opportunity to visualize the field and its structure. For future projects, they shall be able to show a more differentiated approach to these actors and use their potential more effectively for the development of the open data culture in Armenia.

Reflections on Open Data

CIVIL SOCIETY ORGANIZATIONS

Summary

Civil Society Organizations (CSOs) do not find that there is a lack of data in Armenia. Instead, existing data is hard to access and compare across different official platforms. Much information produced by non-governmental organizations remains unused as well due to lack of efforts in delivering them to key beneficiaries and not applying visualization tools to make the insights more appealing to viewers.

When considering the open data-democracy paradigm, the use and

availability of data should be discerned as two separate aspects of the same issue. For participatory governance and public oversight, besides the existence of data, its utilization for targeted policy-making is essential. At the same time, NGO target group representatives find that an oversaturation of available data can lead to more opportunities for misinterpretation due to the lack of analytical and technical skills among the broader public. This can also create opportunities for selective reporting and misdirection given the polarized media field and other actors advancing false narratives.

CSO representatives participated in training sessions with the clear aim of raising the internal capacity of their organizations in developing approaches to open data and working with data. Taking into consideration that not all non-governmental organizations can promote the development of Open Data through their work, it is important to acknowledge their diversity in terms of functions and capacities, and to approach the promotion of open data strategically.

Democracy and Open Data

Participants in the CSO target group immediately associated the concept of "Open Data" with transparency and accountability. To strengthen existing mechanisms of checks and balances and to utilize the scarce resources in public administration better, state-produced data should be opened as *"this will increase public supervision"* [quote from discussion participant, CSOs]. At the same time, there was acknowledgement that the civil society is progressively becoming more active, with an increased number of organizations experiencing a need for open data to determine the scope of their work and to participate in policy-development more strategically *"... In order to have literate and informed participation and to plan their future activities"* [quote from discussion participant, CSOs].

Another participant mentioned that there is already a vast amount of data and information available, so more accessible data will not change much for the work of non-governmental organizations. From this perspective, it is the format of "open data" that adds value and not the information contained in it. Without differentiating between "open" and "publicly available" data, there is enough content to rely on,- *"At first I understood "open data" as "publicly available data" and from that perspective,* [it seemed]

there isn't a high demand for open data, as already existing data is quite a lot" [quote from discussion participant, CSOs].

A key issue brought up by all participants of the discussion is that too much available information can lead to its misinterpretation and selective coverage by the media, which could create conditions that promote sensationalist journalism. The underlying issue here is the lack of capacity to aggregate and analyze data, which leads to faulty conclusions. Thus, awareness-raising efforts need to be made in parallel to publishing data. Overall, there is a low capacity of working with data, which can be viewed as a factor for its low demand. However, CSOs should be acknowledged as a diverse group, where not all actors need to be working with certain types of information.

In addition, participants mentioned concerns about the possibility of identifying an individual in a small community when enough characteristics about the individual are collected in the data set. This concern relates to a potential lack of confidentiality that could lead to others identifying how many resources and assets an individual has by looking at financial information collected on the community level by the cadaster. Similarly, CSOs raise issues of municipalities or local administrations posting the names and addresses of individuals receiving aid and social support from the state on the wall of the administrative building which is stipulated by national legislation. These concerns raised by civil society representatives show the difficult balance between transparency and confidentiality that requires further local level investigation to avoid generalization and disaggregation issues in data collection.

Ownership of Open Data Development

As the civil society monitors the state's accountability, CSOs view themselves as essential actors for the development of the open data field in Armenia as *"the civil society is a link between state agencies and the society, it is especially in need of open data"* [quote from discussion participant, CSOs]. CSOs' voice is somewhat heard as they participate in developing various policies, and engage in public discussions to protect the rights of local citizens. Thus, *"it is not important whether the data exists to be used, but rather whether the state published the data, and to what extent it is useful and*

what demands we [the CSOs] *can present to improve the quality of the data"* [quote from discussion participant, CSOs].

At the same time, concern was raised that many NGOs conduct research and complete projects for their own benefit rather than to provide aid to their fields and raise public awareness. When NGOs promote participatory action and state accountability, *"...they need to follow how result-oriented the published data is and to what extent state policy monitoring can be conducted based on this information"* [quote from discussion participant, CSOs]. CSOs understand their role in this process as agents of critical thinking and promoters of participatory decision-making, and simply having available data is not sufficient to act in the field.

Participants of the CSO target group also believe that despite the active involvement of the civic sector in the development of the open data field, the state remains the key player in the undertaking *"... as it is the main holder of the data, thus from the perspective of open governance, the state needs to be the main stakeholder in the promotion of the sector"* [quote from discussion participant, CSOs]. In other words, it is not the civil society's role to improve the sector, but to push for state accountability. *"I do not view the civil society as a separate actor that needs to develop the field, rather it is the state's responsibility to be proactive, on the other hand, if the civil society does not express the population's institutional demands and rather acts on its own, then its effectiveness will decline"* [quote from discussion participant, CSOs]. In other words, mobilization in the CSO sector is needed to collectively push for the development of the open data field.

Participants also state that information has never been unnecessary, and the stage of requesting information formally should be overcome without immediate demand for the data. Rather, the information should be accessible at all times and be used at a later stage.

It is also essential to understand what activity the information will contribute to because there are many functions of CSOs that do not require working with data. CSO target group participants noted that data is important for evidence-based decisions, but there needs to be a separation between actions towards transparency in general, and CSOs' roles as proponents of the subject when their main line of work includes analysis, watchdog activities, spending of taxes, etc. Thus, an analysis of functions is important.

In advocating for open data development, or any idea of public interest for that matter, the success of civil society organizations lies in their sustainability and longevity. This is a continuous problem in Armenia, where local NGOs easily appear and close down due to the lack of long-term vision and project-based lifecycles.

Security and Open Data

From the legal stance, participants find it difficult to say how the opening of data in different domains would be regulated. They argue that it is difficult to define data pertaining to specific sectors in comprehensive legal terms for passing laws. Moreover, in categorizing data under "national security" or "threat to health," it would be easy for the state to close data based on the legislation.

Participants question how detailed the security consideration is in the data. *"Many times security issues arise not from the data itself, but from working with it and analyzing it"* [quote from discussion participant, CSOs]. At the same time, linking security to opening data can lead to another extreme. Being a member of the UN, Armenia has certain commitments to periodically present reports and data, meaning that information is revealed and sent abroad on various indicators. In addition, the security and protection of data itself is questioned, with participants referring to information leaks that happened during the second Nagorno Karabakh war in September-November, 2020. Information that is not open to the Armenian public is nonetheless available to enemy forces. *"We can inquire about the prisoners of war, but the government will argue that it's a state secret, but the enemy has that information and moreover, knows about the POWs to a greater extent"* [quote from discussion participant, CSOs]. *"For example, when during the war information about food stock, and the number of boys by specific age group were published, that data had already been recorded in various reports, and the enemy could have figured it out by themselves. Thus, first it needs to be established what data should not be available for the world, for international organizations, as long as this security situation prevails"* [quote from discussion participant, CSOs]. Therefore, the dominating argument in the discussion is that data is already available in various locations, and it is up to a stakeholder to analyze it and answer specific questions of interest. In general, participants of the discussion point at perhaps the

negligent approach of the state and society to disseminating information that can be of vital importance to national security, and the overall lack of supervision over what kind of data becomes public information.

Participants agree that the topic of security is often manipulated. here is a need for a definition of open data both from the legislative perspective and as a local concept, better adjusted to the circumstances and political and security environment in Armenia.

General Issues in the Field of Data and Information

Overall, participating CSO representatives agree that the opening of available information (and data) should be advocated internally in their own organizations. Reflections lead to many participants considering working towards opening their own data following the training sessions. Many also point out that they work with beneficiaries and organize various capacity-building events themselves. These activities can also serve as networks to raise awareness about the importance of showing the work that goes into reporting as part of projects implemented by CSOs.

Though most of the participating organizations have their reports available for the public, they understand that bringing available information into an "open data" format will be time-consuming and costly. At the same time, not all collected information- though useful for public consumption- can be released as it can be sensitive and lead to manipulation. *"The issue is that we will face a lot of manipulation, the information will be used for political campaigning, which will be done by specific individuals, specific media outlets..."* [quote from discussion participant, CSOs]. As actors in the private domain, CSOs also realize the restrictions of distributing information due to limitations imposed by donors.

Finally, while having the opportunity to disseminate the available data, CSOs lack understanding in their importance for various stakeholders outside of the immediate beneficiaries of projects and do not publicize the information properly, including a guidebook or reference to the implications this data could have for policies in different domains.

Summary

Participants of the discussion were aware of the definition of the term "open data", and mentioned that its features are ease of access including the opportunity to download and edit. Though they believe that it is possible to achieve high quality "open data" in Armenia, improvements in the public sector are very slow.

Representatives of think tanks believe they complement the data produced by the state, but also agree that due to the creation of such information being a source of income for them, think tanks often do not openly provide the information they have gathered, but sell it instead.

The implementation and enforcement of laws and regulations for publishing open data is a priority issue for transparency and accountability. However, there is a lack of demand for open data from the public of such a culture. Participants find that it is easier to obtain information through personal networks than to follow official channels.

Democracy and Open Data

The term "open data" is generally associated with public administration, accountability and transparency according to many of the representatives of the think tank target group. The Open Governance Partnership is referenced as a platform promoting the idea of "open data" in Armenia.

Think tanks consider themselves key players in creating data important for the state and the public, and believe they contribute to policy-development to some extent. Representatives of the target group also understand that the more data is open, the more perceptions about the future will be clear. From this perspective, transparency of data will aid society's response to potential challenges in all spheres of life.

According to target group participants, the demand from think tanks to participate in policy development is high, and this goes in parallel with the need for data. However, as the state remains the key player holding information, it can be argued that the demand for open data from this perspective

is not high as the state has access to the collected information internally.

Demand for democratization and increasing trust towards the government is high, but within the public the demand for open data is rather low. In general, participants of the target group find that the society has low levels of engagement and interest in political, social and economic processes and decision-making, and open data has low chances of being utilized by members of the public. But, when viewing think tanks as tools in the hands of the public to pressure the government for better policy, think tanks can and do function as watchdogs. Think tanks view their role in society as a connecting link between the public and state bodies.

In a more philosophical debate, according to several participants, open data is not a primary cause of democratization, but is rather a result. Moreover, they believe that democracy cannot be achieved only through publishing data on various indicators, as it entails the inter-relation of persons and institutions.

When it comes to regulations in the sphere of publishing open data, participants believe that businesses should not fall under these regulations, as putting commercial information under risk can significantly hurt the sector. State bodies, however, should fall under these regulations, as they are fed by taxpayers and thus are required to report and be accountable. Realizing that investing in "opening" data is costly and time consuming, if the state can take on the responsibility, the private sector and NGOs should not face such regulations. At the same time, the level of bureaucracy is overwhelming and additional regulations will be a burden on state agencies and slow down ongoing work.

There is room for conflict of interest, which can rise in the think tank and civil society sector, as these actors often work with international donors who have their regulations and might not be willing to open information. This can lead to significant restrictions in this domain.

Overall, the lack of such regulations can create a vacuum where many processes remain unclear. Thus, a legislative approach to the issue will enrich the relations of data producers and users within state bodies to improve policy-making.

Ownership of Open Data Development

Participants find that the lack of democratization, transparency, and accountability mechanisms can lead to concealing data. This is where analytical and research centers have a role to play. Think tanks are able to bring up issues and catalyze a discussion, participate in developing discourses and therefore create supervision over the government. Taking this into account, it is important to mention that the prioritization of opening data should come from the government, and there is a consensus that if state bodies indicate that information is not public, other actors are powerless to change that.

At the same time, representatives of the target group realize that think tanks do influence policy recommendations by conducting various sectoral analyses and participating in raising awareness for different beneficiaries. Working with international actors, think tanks also act as data producers. Though they persistently express interest in participating in evidence-based decision-making, they feel a lack of engagement coming from the government.

Security and Open Data

Participants find that juxtaposing security and open data has rather limiting results. In this paradigm, open data and government produced data in general can be restricted when referencing national security in absolute terms. At the same time, a clear distinction should be made between data containing national secrets, confidential or private information, and generalized information available to be analyzed on a broader scale.

Most participants think the statement "the spread of open data contradicts national security" is rather broad and it is obvious that there is information that should not be publicly accessible. At the same time, they find that economic or social indicators can be taken from neighboring countries, analyzed and used to exert influence on information consumers of the other side for political purposes, or during a conflict. Thus, although the information is not directly significant in the national security domain, it can be utilized for such purposes.

At the same time, while information should be made available by first considering the security implications, information leaks happen often. According to the participants, political will and decision-making in the public policy domain is an issue, as *"no information remains confidential in the long-term"* [quote from discussion participant, Think Tanks].

Another interesting approach to the question is to look at not the "open" format of the data but whether such information exists or not. Thus, it can also be argued that any kind of information, regardless of its properties, can be utilized from the lens of national security[14]. Several participants were of the opinion that openness of information should not be manipulated in the name of national security, and this line of thought is faulty.

General issues in the field of data and information

Think tank target group participants find that in the making of different mid-term strategies for development in Armenia, policies must be based on analytical work and evidence.

Oversaturation of the field with data will not help the public to orientate, and instead, the delivery of comprehensible information by state agencies needs to be improved. Analytical capacities of relevant bodies, both public and private, should be engaged. The diversity of data will take much time and resources to categorize and synchronize before it is presented in a useful way.

More technically, budgets on state agency websites are difficult to decipher to analyze financial indicators: this comes from the user-unfriendliness of interfaces on the websites, as well as the information lacking an easily-understandable codebook or manual. Visualization tools on these websites often have poor quality and are not given enough importance when communicating with constituents.

In broader terms, there is a lack of comparable information in the social and education sectors, in comparison to data available in similar countries. There is a lack of information or platforms where existing reports, analytical and research work can be found in Armenia. More work needs to be

14. Several participants mentioned that before the introductory session on "Open Data" they thought the issue lies in the data being or not being collected, however, during the lecture understood that the data can exist, but due to technical properties (i.e. machine-readability) will not be considered as "open".

done towards the validity of conducted research through making available the metadata and fieldwork notes of completed studies.

Many state agencies present information in non-machine-readable formats, making it hard to manipulate data. The demographic breakdown of data on the Marz (regional) or community level is not accessible, hindering the implementation of various targeted programs effectively. There is a difficulty in accessing and utilizing existing information. Data collected for the Sustainable Development Goals, collected by the Statistical Committee is not disaggregated for vulnerable groups. There is also a concern that there is a difference between SDG indicators and ministry indicators.

LOCAL GOVERNMENT

Summary

Most participants in the local government target group represent the finance-economic department of the municipality, and are acquainted with unified electronic systems (i.e. e-community.am) and use information such as "arlis" and "irtek" from the legal and legislative field as well as election.am, the community population register, the police register, etc. Due to their exposure to such data, the current target group has an understanding of the utility of large databases and automated processes that allow data producers to avoid strenuous mechanical information searching and entry. Having had the experience of working with accessible and easy-to-use data, this target group is particularly well-informed about the chances of developing Open Data in Armenia.

Much work remains to be done in the domains of publishing private information (of citizens and municipality employees), the role of awareness and consent within such processes, technical issues with verifying identities of individuals in municipalities, information that is required by law to be published on local government websites, and associated penalty mechanisms. In addition, participants suggest much work could be done for institution-building, with specific positions in the structure of municipalities responsible for various functions in data-production.

Local government body participants believe that "open data" with all of its attributes can be achieved on the local level, but it will require consistent work and the involvement of external experts.

Democracy and Open Data

Participants from the Local Government target group state that most of the information they produce does appear in the public domain and is open for access. They believe this contributes to citizen's participation in holding the government accountable, also stating that interest in this information needs to be periodically triggered to utilize it more broadly.

Target group participants especially focused on information constantly shared on social media platforms, commercial websites, private companies, etc. stating that often users of such services are not aware of how their private information is being used by the other party. At the same time, they find that too much information can overburden the public, thus the delivery of such content should be controlled. Based on professional backgrounds, many will have difficulty understanding various financial reports and indicators. Moreover, because community members that are in need of such resources already know what kinds of information they can access, they will continue to actively cooperate with the municipality.

Procurement information is also accessible publicly; however, it is not displayed on the municipality website and is gathered in a different platform. A discussion was also initiated on the limitations to access to open data if individuals are not computer-literate, going back to the philosophy of "open data" in the first place. Thus, the participants think that the challenge is not in the data being open or closed, but rather in its correct delivery to the public, and the public's informed reception and analysis of it, without putting a strain on either side.

Ownership of Open Data Development

As users of open data, municipality representatives think it would be beneficial to have more information available in the business and healthcare sectors to provide a clear picture of local development needs.

At the same time, they believe that the information they produce will be difficult to bring to a format suited for "open data", as most of the content of the materials produced would be hard to quantify. At the same time, these participants consider themselves as the first line of contact with the society, and they possess local-level knowledge, thus viewing themselves as the most capable in promoting open data in practice.

Many mentioned that as workers of the municipality, they held training sessions for the local community on how to access the electronic portal to receive information. This led to a higher level of awareness about the work of the municipalities among the population, but the low level of interest in the municipality's work and the community's challenges remains high.

Participants of the discussion believe that the local government bodies have enough resources to start adhering to the principles of open data, however, there is a lack of will and consistent work to deliver a final product. This is also linked to specifying particular positions and chains of command in the local government structures that would be responsible for these operations.

Security and Open Data

Municipality target group representatives stated that the high flow of information can be a challenge in crisis situations, and can present itself as strategically useful for the other side, as seen from the second Nagorno Karabakh war. Security issues also arose from the poor management of information. In general, there was a consensus among the trainees that gaps in the sphere of information were significant, and they became even more visible and critical during the war.

At the same time, during the conflict municipalities were able to quickly organize to respond to the influx of the displaced, register them, conduct information gathering on social cases and needs assessment, which demonstrates their flexibility as actors on the ground. The collection of such sensitive information was done purposefully, thus, the participants find that this data should not be open and only be accessible by designated parties. Thus, basing on the security challenges of Armenia, local government representatives believe that data from not all domains should be open.

Much effort needs to be made in the direction of raising awareness among the public regarding the private information they knowingly or unknowingly share on social media platforms, which the current target group participants also consider a security risk.

General issues in the field of data and information

Issues in the information domain are multifaceted, and local government representatives shed light on them. These include challenges associated with incomplete or faulty information, technological issues and relations with the public.

Participants in the local government target group in the past have had problems with accurate reporting due to the lack of information in communities, leading to inaccuracies in publishing. Another challenge presented by the trainees is that the uploaded information is not consistent across all municipalities.

Issues in communication can rise when the municipality has to send notices to residents, but the contact information is outdated, thus making it hard to track individuals. While this is easy to resolve in small communities, where interpersonal contacts compensate for the lack of official information, the mentioned issue brings back the discussion of challenges associated with confidentiality of personal information. Concerns are raised regarding making public the names of individuals receiving social security or other support from the state, which is again a gap in addressing the issue of confidentiality of personal information. A technical challenge is with identification mechanisms, such as the lack of ID scanning devices in municipalities, as a technical restriction.

Participants from the local government group also mention that due to the speed of changes in the different programs used for running the work of municipalities, and the automatization of processes, it is necessary to periodically train employees to use these tools. More relevant to their own work, local government representatives note the challenges with processing citizens' requisitions on the e-request.am portal when electronic signatures are missing. This immediately directs the request message to the rapid response team, which often rejects or sends back the application as a result.

In terms of the structure of the local governance bodies, in the past a position entitled freedom of information specialist used to exist, which however was removed as a separate domain. Now the duties related to decisions in public reporting are divided among the secretary and the chief of staff. *"To some extent, it is not clear what functions each employee has in respect to data"* [quote from discussion participant, Local government]. Pertaining to applications for information, local governance bodies follow the Law on Freedom of Information to the extent of reporting on the number of cases a monthly basis, and this information is not presented as a statistical breakdown of the types of requests. Hence, there is a need to examine the law itself, its stipulations and how closely state institutions are adhering to them. With the lack of guidance by regulations and laws, and overseeing bodies such as the Marzpetarans, municipalities practice low levels of sharing information. In this, these actors shall be constantly engaged and active in working with and supporting the population, each contributing with their part to the general establishment of an open data ecosystem.

Municipality employees' contact information becomes publicly available without their notification, which the municipality should inform employees about as an entity processing private information. According to privacy of information laws, such a process cannot take place without the consent of the individual.

MEDIA

Summary

Media representatives mostly do not think there is a lack of open data. The problem is the absence of data in some areas or the lack of qualitatively collected data rather than its being private.

Media representatives also see themselves as users or reproducers of already analyzed open data. They see the government as the main actor in the process of opening the data.

Some of the media representatives value access to open data, as it will make it possible to provide accurate information to the public. However,

some note that the open data will mostly make the media field flooded with fake news and cause security issues, as many journalists do not have enough skills to use the data properly.

Democracy and Open Data

During the discussions, we noticed that the media and CSO participants tend to look at data as a means of profit. Some of the media representatives note that not all of the data they produce is openly shared with the community, as some of the information is sold. They also put advertisements on the information which is provided on public platforms.

Two of the participants note that open data will make the media field flooded with fake news because everyone will have so much information. *"If we increase the amount of information, we increase the possibility of fake news or wrong information in the field"* [quote from discussion participant, Media]. Participants explain this by the shortage of data analysis skills within most journalists in Armenia. In this situation, where only a few can provide the appropriate analysis of open data, their publications will get lost among the unprofessional publications.

One of the participants notes that even if there is some need for open data nowadays, it is not a major problem in Armenia to focus on, as the situation is not complicated. Therefore, the demand for open data is not major as well.

On the contrary, some others view data as the possibility to make your statements valid and reasonable, and to aid in the dissemination of more accurate information. They value the importance of open data as they sometimes faced the lack of needed information and didn't understand the reason for their privacy and nonpublication. *"The more open the data, the more journalists will be able to provide accurate information to the public"* [quote from discussion participant, Media].

One of the participants thinks that open data is not related to democracy that much. He associates democracy more with the protection of the rights of minorities and he has no idea how open data will contribute to democracy. Another participant agrees, he believes that democracy can be reached by changing the economic and social structure of society. Some think that

open data can only somehow foster democracy as it can decrease corruption and lead to transparency.

One participant notes the right to require data is important because it restricts the monopoly of information management, makes the State more accountable, and processes more transparent. It makes information more accessible and becomes an instrument of democracy [discussion participant, Media member].

Ownership of Open Data Development

Media members mostly think that the production and publication of open data are out of their working profile. Their role in the process is the publication and representation of already open data. Nowadays, the media is the transitional point of information in Armenia. They usually do not do their own analysis, but rely on already analyzed information from different open access portals. So, they are mostly open data users and sometimes reproducers rather than producers.

They note that the main role here belongs to the State. *"If the State decided to keep data close, the media cannot do anything about that. Media by itself is not enough. We need other public areas to be involved in the process to be able to demand accessible data"* [quote from discussion participant, Media member].

Security and Open Data

Some participants noted that sometimes information is dangerous to be published as it contains confidential facts and can lead to security issues. For example, some media members faced a lack of information about Nagorno-Karabakh citizens during the War, however, they note that as the process can lead to security issues, it is understandable. *"If there is a lot of open data about the processes that take place in the State, it makes the State vulnerable"* [quote from discussion participant, Media member].

These participants noted that in this complicated region it is better not to have much open data. They bring the example of Iran, which refuses to provide its statistics to the UN and has limited internet access. They think

that the country will be safer if it is closed to foreigners because the more open the country is to a foreigner, the greater is their influence. They believe that after the opening of most of the data the problems will be more than the opportunities and benefits.

The other participants mention that there is some problem concerning security when we speak about the open data as the enemy already has data in the field of security. It would be better to have more open data or the data in general, as it would help for social research, urban development issues, etc. Besides, even if we try to keep the data as confidential as possible, in the 21st century everyone's personal information is vulnerable, as there are different ways to get them via virtual social networking portals.

These participants noted that the idea of the open data itself does not contradict national security, but there should be some filtering process before allowing full access to the data. Every case must separately be observed. Open data should exist but must be controlled, but the State does not have enough tools to control the process. For example, the government cannot protect personal information that is openly shared on social media.

General Issues in the Field of Data and Information

Overall the media members are concerned about open data because of the lack of skills among most journalists in the field. We can identify the following challenges according to data realization and usage within media members:

- The media field is flooded with non-professional journalists who can manipulate the information, and the openness mostly will lead to new problems rather than solutions.
- There are not enough journalists in the field with the skills to work with data properly, which can lead to misinterpretation of information and increase of info-noise unconsciously. In this situation where only a few can provide the appropriate data analysis, their publications will get lost in the unprofessional publications.
- Open data must be controlled, but the State does not have enough tools or regulations to secure all information.

- Sometimes the problem is not that data is unavailable, but rather that it does not exist. The governing institutions are not informed, or lack enough tools to collect data about several sectors or rapidly occurring situations.
- The State bodies do not work in sync with each other. For example, one of the participants needed some data. The request was rejected by the Statistics Committee, but the data was available in the Public Relations and Information Center SNCO.
- The problem is not about the lack of open data but the quality of collected data.
- Sometimes, it is hard to get open data as the information can be associated with corruption risks.
- When there is too much open data, it is hard to detect which data is more reliable and important.
- As few media companies in the field are occupied in data analysis, there is no competition which could lead to development.
- Sometimes, when the organization requests data from the government, it is hard to know if you were rejected because of the absence of information or because of subjective preferences.

CENTRAL GOVERNMENT

Summary

The discussion with Central Government representatives showed that there is a problem of data management in the field. There is no separation of open-public and confidential data and there is a need for legal regulations during data publication.

The participants believe there is publicity, but data coordination and interconnectedness of databases are weak.

Data users do not have an appropriate level of awareness and data literacy. This is a significant problem that can make open data a threat to secu-

rity, as people can use it without realizing that they are harming the State.

Democracy and Open Data

The representatives of the central government mostly had the experience to work with databases. Some participants noted the importance of databases and their open access, as there is a lack of information in society. Open data leads to awareness within people, and proper knowledge also leads to protection.

"The participants note that open data is necessary, but sometimes too much open data makes the field flooded with misinformation. This is not a preservation of democracy but a murder" [quote from discussion participant, Central Governance member].

According to some participants, this is a severe problem. The solution requires a distinction between data during publication, and legal regulations should control the process. People who spread false information know that there are no sanctions against their actions.

Other participants noted that there is a lack of information. Even if most of the data is not open, people can access it. However, the problem is the level of transparency and the user's ability to manage it properly. According to central government representatives, data users cannot work with the data and are not fully informed about the overall social processes.

Some participants noted that open data is a necessary but not sufficient condition for the development of our country. But it is necessary, especially for investors who must study data in their field to make an informed investment decision. Open data will help investors to know more statistics about Armenia and make investing processes frequent. This will foster development.

"The success and development of the nation-state depend on the success of data experts in the field of data. The data sector needs to be valued by the public. The data are the eyes of the state authorities" [quote from discussion participant, Central Governance member].

Ownership of Open Data Development

Discussions with the central government participants show that they usually deliver data in the data distribution processes. The participants work with different data, and each section collects the statistics corresponding to their work. They provide these statistics to users who request them.

The participants from regions mention that almost all information about their regions is available on their websites or departments. They note that the governing bodies are mostly engaged in sectoral data collection.

Discussions show that data about several sectors is not collected by the government. One example is information about unused lands. The rest of the data, they note, is openly published on the Armstat website. The quarterly reports of the State Department, government reports, the economic indicators also are available and published in Armstat. There isn't any database that gathers all information; however, the information is separately available in every department.

The central government participants, like media representatives, also mention that the State bodies need a public demand to open the data, and if we achieve the demand for open data, the government will work in that direction.

Security and Open Data

The participants note that some information must be classified. Some information should and must be open as it leads to social benefits and analysis for development. Some information is dangerous to publish as it contains confidential facts and can lead to security issues.

The participants believe that data should be published according to the established procedures by those who have the right to manage it.

The participants note that they answer all requests from companies or individuals, but the requesters sometimes want to clarify information that is not allowed to be published. When the governing bodies reject the request within the law about the non-provision of data, some people express their dissatisfaction without understanding the regulations.

Unlike other partners, the Migration Service members note that their data should be confidential, as they work with personal data and deal with international conventions. However, some participants believe that there is no need for open data for State security.

"When we digitize data, we must also consider the possibility that hackers will obtain it. It is necessary to separate the spheres that should have open access from ones that must be confidential" [quote from discussion participant, Central Governance member].

However, some members also note that a threat to national security can be found in any information stream. *"If we concentrate on this, any information can be closed under the pretext of national security and be banned"* [quote from discussion participant, Central Governance member].

General Issues in the Field of Data and Information

Overall the Central Government members are concerned about the open data because of the lack of skills of data usage. Also, the data is segregated by different sectors and regional governing institutions, and this problem of data unification makes it hard to collect general information. Problems mostly occur not because of a lack of data but because its representation is not appropriate. We can identify the following challenges according to data realization and usage within media members:

- The representatives of the central government note that security issues or misinformation occur not because of open data, but because data users don't have enough skills to properly work with it.
- According to central government representatives, data users lack not only knowledge of data analysis and collection, but also information about the ongoing social processes overall.
- Open data itself is nothing when you don't know how to analyze it. According to the participants, not all regional institutions that hold large amounts of data have skilled professionals to work with them.
- Existing databases are often not accurately designed, and it takes a lot of time and effort to work with them.
- Governing institutions usually work with Mulberry, yet it is hard to

find information in the portal. For example, the workers can no longer access documents once they are three years old.

- Even the regional institutions don't have united databases. All their data exists by separate departments and is not collected in one portal.
- It is hard to unify all the data in one place because in some cases the data is coming not only from documents but from social media portals, hotlines, and phone calls. This information is collected as well, but it is hard to systemize it as a database.
- There is a need for data literacy, competent organization, and presentation of data.

ACADEMIA

Summary

The discussion with Academia representatives showed that there is a problem with conveniently collected databases in the field. The participants value the existence of open data, particularly in specific areas but note that not every sector needs open data. Some of them believe that collecting data by personal connections is more effective and takes less time than the struggle with the opening of databases. The participants mostly believe that open data can increase the level of participation in the decision-making process.

The academicians believe that in ideal circumstances, higher educational institutions must be one of the bodies that are producing open data. However, in Armenia, their influence is not enough to be able to make changes by themselves. They currently see themselves as the users of data.

Most academicians believe that the concept of open data itself does not affect security as the state decides what information must be strongly confidential.

Democracy and Open Data

Some participants believe it is crucial to have access to information provided by state bodies as it leads to supervision, transparency, accessibility, participation in decision-making processes, and responsibility. They note that sometimes, especially in specific research areas, there is a significant lack of data. However, one participant believes that the problems of accessible data are less significant in the sector of law, as there are more possibilities to get data in that area than in sociology or economics. The law of freedom to get information in the area makes it possible to access data concerning the law but the information concerning banks is more confidential and harder to get, for example for economists.

The discussion shows that some academicians believe open data is not an essential problem for Armenia, and the need for open data is selective. They note that if someone needs any data, they can get it by using personal ties. The sector in Armenia is not that big, and it is possible to have someone who you know from any institution to help you get the data. They believe that this practice is widely common in the field, however, the legal problems and issues with effectiveness are other topics to address. These participants note they did not notice anyone in the field request open data and only noticed individuals trying to get information using their connections. *"Surely, this is not fair as there always are some who have not tried to get information but the effectiveness and fairness do not always go the same way"* [quote from discussion participant, Academia member]. Other participants agree that the problem of open data is only essential for specific sectors, and in other sectors, there is no need at all.

According to the connection of open data to democracy, one participant notes; *"the more informed a person is, the more they can participate in the decision-making process"* [quote from discussion participant, Academia member]. However, this participant adds that in the case of Armenia, the development and introduction of open data should not be done as artificially as the introduction of democracy was in the 90s. Society should be prepared to use open data and understand its importance.

Besides, another participant believes that every government tries to manipulate its people by lack of some information, and the data will never be completely open, as open data to some extent implies uncontrollability.

Ownership of Open Data Development

The academicians also discussed different institutions' roles in open data production. They believe that the main role is on the state and on researchers who produce the data. Academicians do not see NGOs as producers or distributors of open data as they have contracts with their donors and their information can be confidential.

The participants believe that academicians usually have the role of open data producers, however, they believe it is not about the Armenian reality. We, first of all, have the problem of quality academic papers' publication, as academic employment is not supported and financed enough by the government. Universities are not the most important decision-making body in Armenia. *"Sometimes universities can be data generators, but very little depends on them"* [quote from discussion participant, Academia member].

Universities and academicians are not only the producers but also users of open data. Academicians note that higher education institutions must be motivated to conduct research and provide their research findings and collected data to the public. If these findings and data collected from academic research will be accessible, the academicians and professors will have more data to share with students. *"Most of the time assignments are not given to students because there is no information or data, and the assignment cannot be completed"* [quote from discussion participant, Academia member].

There is a participant who questions the university's level of interest in the development of open data. This participant believes that the university should have the role of researcher and teacher but open data should be published by the state bodies and statistical institutions.

Security and Open Data

The participants think that open data itself does not contradict national security. They note that open data is not anything you find and publish. The State knows what information must be public and what must be kept strongly confidential. Participants believe open data in Armenia would need to be addressed through national security strategy. There is a risk; if each sector determines itself as one where open data can affect national security, it will not be possible to publish necessary information that can

lead to development. That is why the State can identify sectors where open data should be banned as ones containing risks to security.

Also, the participant suggests that the data available in international structures concerning the Republic of Armenia should also be open to the citizens of Armenia.

General Issues in the Field of Data and Information

- Sometimes, the issue does not occur because of limited access to data but because there is no existing data in several sectors. For example, there is no data on the use of machinery or crops in the agricultural sector.
- Students also face a lack of open databases and information when writing their dissertations.
- There is a lack of skills and abilities to work with data and to collect it. The institutions collecting data often do not use appropriate tools to do such in a way that it may be easily analyzed.
- Existing databases are already outdated. There is a need to update most of the data that exists. Even if some institutions or organizations do research, most of their data is confidential, and they have issues publishing data because the donors do not agree with that.
- It is hard to find complete demographic data for research. Even if some regions have demographic statistics, they are not unified and are complicated to work with.
- Sometimes, data about similar issues is collected with different methodologies and is visualized in different ways, which makes it impossible to compare or combine the data.
- Professionals working in the field have incomplete skills to work with data- some can collect quality data, and some can better analyze it but have issues with collection. The sector needs cooperation which is hard to reach. Even different faculties from the same university sometimes have difficulties cooperating for the same goal.

- While working with personal data, it is hard to clarify when it becomes confidential and when public.
- Sometimes, it is not clear whether data requesters are rejected because of the absence of data or because the governing or private institutions do not want to share the data.
- Technical problems may arise when a user is unable to process data due to their inability to use certain technology.

Section 3.
Insights and Recommendations

Among the main challenges for the development of Open Data in Armenia will be the implementation of mechanisms to gather and present data by state bodies, as this takes a significant amount of time, and financial and human resources. This process involves consistency in commitment by the government and quality assurance when collecting data. However, when it comes to regulating information production in the private domain or by NGOs, there is a consensus that this will not only be difficult to enforce, but will also contain many risks such as revealing commercially valuable information, and cause conflicts of interest with third parties not falling under these regulations.

Participants also agree that the state's commitment to releasing open data is an indicator in itself that the government upholds transparency and accountability as values.

Non-state actors, such as think tanks, non-governmental organizations and academia believe these sectors have much to offer in terms of accumulated knowledge and capacity for policy recommendations, and are of the opinion that much effort is required by the government and decision-makers to utilize their potential. There is a general agreement that often policy-making is done in isolation, without taking into consideration extensive work conducted in different domains by these actors. As the government is the main producer and holder of information, it is up to the state to deter-

mine and respond to the demand for open data.

Target groups point out that if the full realization of opening data in Armenia will lead to oversaturation in the information field, it will lead to more instances of misinterpretation of information, selective reporting, and "yellow" journalism. Thus, though open data should be a persistent goal, awareness raising and capacity building for data users should also be a priority, and be a parallel process.

As such, an analysis of functions and roles of different non-governmental organizations needs to be conducted to understand the type of support these bodies can provide in the overall promotion of the open data ecosystem in Armenia. These structures also have an understanding that effort needs to be coordinated on a larger scale.

Almost all the participants found the relation of security and open data is not dichotomous. The same applies to democracy-security, and democracy-open data.

There is unanimity among the target groups that there is no lack of information. The issue is ease of access and data aggregation in a user-friendly and understandable way. Among think tanks and NGOs there is a belief that duplicity of collecting the same information happens, and the strategy of disseminating results of research is often poor and sporadic. The delivery of material is also done in a raw way, without applying visualization techniques, which makes the information unattractive.

The local government target group's recommendations focus on internal capacity development. These are the stakeholders that can play a major role in monitoring the success of open data implementation on a daily basis. As these bodies are the most aware about community issues on the ground and the state's capacity in addressing them, they can serve as the best source for needs assessment and testing practical solutions. Local government bodies are the most aware of laws and regulations, and can play an active role in raising awareness on personal information, confidentiality, and feasibility of implementing ideas relevant to opening data.

Recommendations by CSOs

- In order to determine the role and level of engagement in promoting open data development in Armenia, an analysis of their functions is important. Not all non-governmental organizations engage in analyzing data, though all agree that CSOs must collectively push for transparency and accountability of the state, including when producing and opening data.
- It would be interesting to explore the path to regulating opening data in various countries to understand whether a more complex legislative field enables or limits open data.
- Due to security repercussions, an internal analysis should be done of what kind of data can have far-reaching outcomes for exposing information of national interest. Some regulation should be applied to opening data, in terms of sectors, the classification and categorization of data.
- A monitoring center should be created for public information production in accordance with laws and regulations in Armenia.

Recommendations by Think Tanks

- In ordeImprove and invest in developing a culture of visualizing information to better connect with the public and deliver information.
- State agencies should invest in outsourcing work with independent think tanks for analytical work.
- Think tanks should be more involved in the strategic development of the state, and policy-making starting from the initial stages.
- Think tanks should put more effort in presenting their research better and making their analytical work better accessible on their platforms.

- More technical capacity-building should be conducted for opening data collected by think tanks.
- Better mechanisms for advocacy and lobbying should be developed in the broader civic sphere, including tools for resisting being targeted by such activities.

Recommendations by Local Government

- In ordeMoving towards a unified information center will decrease a number of issues pertaining to inaccessibility to information.
- Local populations need to be introduced to the online portals run by municipalities to better participate in resolving community issues. In addition to raising awareness about the work of the local government, other mechanisms need to be initiated to make the population remain interested in participating in problem solving.
- Create a roster or a database of professionals by region for easier management of new job openings on the municipality level.
- On the local government level, employees should receive training periodically in using new tools at work for data entry and work management, and have the opportunity for exchange of good practices with counterparts in different regions for more efficient work. Municipalities should also work with information technologies employees to understand how to process information. A system of periodic examinations could also be introduced.
- State structures should better inform citizens what kinds of personal information they are processing and for what procedures, thus extending and adhering more fully to laws and regulations.
- Capacity-building among community lawyers on the topics of freedom of information and personal data would be useful.

- There is a need for general awareness-raising about how various private companies, social media platforms and other parties use private data provided by their users. This also has far-reaching implications from the perspective of overall information security in Armenia.
- A step towards government accountability has been the mandatory declaration of assets by the community council members.

Recommendations by Media

- In ordeImprove the connection between different sectors of governing institutions for more accurate collaboration.
- To concentrate mostly on the quality of data collection, as the open data that exists is not extensive enough to work with.
- Train journalists on developing skills to work with data, including data management software, data selection, analysis, and visualization.
- To unite other social groups around the idea of open data, as the media field alone is insufficient to make this change.

Recommendations by Central Government

- In ordeAll information and statistics should be collected in one platform.
- There must be a distinction between data during publication, and legal regulations should control the process. People who spread false information know that there are no sanctions against their actions.
- State bodies need a public demand to open data.
- The Freedom of Information Act has not changed since the early 2000s. It should be reviewed and updated.

Recommendations by Academia

- In ordeData should be stored in databases rather than in reports.
- Create a common platform where all databases will be unified in one format.
- Collect data from students' research.
- The portal can be in a website form, where there will not only be the databases from NGOs but also from students.
- Motivate students to provide quality databases with benefits such as tuition discounts.
- Prepare training that can teach students to work with data and collect it properly. This will contribute to the ability and skill of future professionals who will work with data in the future.
- Prepare training for scientific advisors about data collection methodologies.
- Cooperation portal between groups of different professions to complete each other's work.

Appendix 1.
Proposed Concepts

As part of Activity 3, the representatives of the stakeholder groups involved into the training sessions were requested to sketch and offer draft concepts on possible ways of develop the open data culture in Armenia. The concepts presented below could serve as another layer of practical recommendations and potential hints for advancing a healthy and effective infrastructure of open data.

Concept 1.

Removing the element of personal connections, nepotism and cronyism from recruitment in state agencies

- Improvement of the public service sector for better policy and strategy development, including the development of actions and directions for implementing intended goals.
- The targeted actors and bodies are public servants, the public service council, corruption prevention actors, institutions that develop cadres.
- A strategy for improving the cadre policy in the public sector needs to be assessed, evaluated and reformed.

- Punitive mechanisms need to be implemented to fight against cronyism and give opportunity to skilled cadres.
- De-politicization and de-partisanization of public service positions.
- The process should start from targeting the leadership of academic institutions.
- Development of strategies and mechanisms to respond to the above.

Concept 2.

Respond to the lack of direction in the mid-term strategies of the state

- Develop a concept and strategy for the sectoral goals and actions for each state body for a more efficient and concrete state development strategy.
- The state should order services and projects from think tanks and civil society actors; state and non-state actors should cooperate in information production.
- Think tanks need to be consulted for formulating development policies, and evidence and research should become a priority for state planning.

Concept 3.

Guide broad circles of the society towards better use of open data and open sources

- Large-scale action is necessary to contribute to the formation of a more educated and informed society.
- Civil society actors and individual experts are the primary players in facilitating this process through cooperating with local governance bodies.
- The project should begin with active community members, who will be interested in cooperation and receiving awareness-raising training. A needs assessment will be conducted to understand gaps in

communication between the community and local authorities, following which stakeholders will be sought to implement the project.

- The most important beneficiaries would be active youth, media representatives and community members that are interested in community affairs.

Concept 4.

Creation of a joint data platform that will bring together all data from state bodies and agencies

- The goal is to aid in more efficient and targeted use and delivery of data, decreasing bureaucratic processes, and leading to economizing time and finances by the state and by citizens.
- Research and analytical centers, civil society organizations, and international organizations have to closely cooperate with the government to implement the project effectively and provide state bodies with support when transferring and harmonizing information on a joint platform, and for the platform's continuous and consistent management.
- Implementation of the project will require the involvement of technical experts and employees of the public sector directly working with processing data.
- The longer-term effects of the initiative will be increased accessibility of information, and promotion of transparency and accountability.
- The implementation of the ideas will require changes in by-laws and statutory acts in the domain of freedom of information and the extensive involvement of the legislative branch in developing the initiative. This will also entail developing an information concept and strategy, taking into consideration national security.

Concept 5.

Capacity building and increase of interest for Data Journalism

- The project aims to increase interest in Data journalism.
- The collaborators and stakeholders are selected journalists and Mass media.
- Participants think that there is a separate issue here, whether they choose to work with individual journalists or cooperate with the media in general. Participants think that it is possible that the program will be less successful if they work with weak media reporters.
- Capacity building training will be required. To increase interest, there should be educational content dissemination to spread knowledge among journalists.
- The long-term effects of the program are institutional connections and connections among media representatives.

Concept 6.

Develop data capacity within public and political leadership. Targets are as follows:

- The aim of the project is to increase the public demand, awareness of various state bodies and make the necessary reforms.
- Participants believe that the collaborators and stakeholders of the program should be journalists, media, society, and the political elite that can show political will.
- Different comparative methods should be used to complete the training, for example, to show successful cases of development by using databases.
- The participants intend for published articles to have a long-term impact.
- The articles will be written about the positive consequences of the publicity of the data, and what negative consequences are caused by the absence of necessary data.

Concept 7.

Media and data literacy, formation of a society living with democratic values. Targets are as follows:

- The project aims to make legislative changes, conduct awareness training, and elaborate information flow management concepts.
- The collaborators and stakeholders of the project will be the State, local self-governing bodies, local and international organizations, narrow specialists, mass media, and non-governmental organizations.
- The long-term effects of the project will be public awareness-raising, correct, objective and systematic distribution and usage of data, which will contribute to the development of various sectors in the country.
- The project plans to make legislative changes in the law on data and information.

Concept 8.

Accurate open database creation for comprehensive sectoral coverage. Targets are as follows:

- The project aims to create an accurate open database/platform ensuring comprehensive sectoral coverage in Armenia.
- Prepare educational programs that will raise the level of legal awareness, the study of international best practices, and their localization in Armenia.
- The collaborators and stakeholders of the project will be local and international organizations, as well as state and local self-government bodies, individual and legal representatives of science, business, and foreign investors.
- The long-term effects of the program are economic growth, accurate reflection of reality, welfare of citizens, Armenia's membership in international institutions.

Appendix 2.
List of Acronyms

ADB	Asian Development Bank
AEGEE	Association des États Généraux des Étudiants de l'Europe/ European Students' Forum
AGBU	The Armenian General Benevolent Union
AIPA	Intellectual Property Agency of Armenia
ANQA	Armenian National Agrarian University
APY	Armenian Progressive Youth
ARLIS	Armenian Legal Information System
ARMCCI	Chamber of Commerce and Industry of the Republic of Armenia
ASUE	Armenian State University of Economics
ATC	Agribusiness Teaching Center
AUA	American University of Armenia
CB	Central Bank
CFOA	Communities Finance Officers Association
COAF	Children of Armenia Fund
CRRC	The Caucasus Research Resource Center
CSOs	Civil Society Organizations
DAAD	German Academic Exchange Service

DFR Lab	Digital Forensic Research Lab
EaP	Employee Assistance Program
EDRC	Economic Development and Research Center
EIF	Enterprise Incubator Foundation
EMIS	Education Management Information Systems
EPF	Eurasia Partnership Foundation
ESCS	Ministry of Education, Science, Culture and Sport
EU	European Union
EUD	Delegation of the European Union to Armenia
FES	Friedrich-Ebert Foundation
GIZ	German Corporation for International Cooperation
HTI	Ministry of High-Tech Industry
IPP	Institute of Public Policy
IPRC	Intellectual Property Rights Center of Armenia
IRI	International Republican Institute
KAS	Konrad-Adenauer Foundation
KTAK	National Center of Educational Technologies
KZNAK	National Center for Education Development and Innovation
MNP	Ministry of Environment
MTAD	Ministry of territorial administration and infrastructure of the Republic of Armenia
NDI	National Democratic Institute
NED	National Endowment for Democracy
NGOs	Non-Governmental Organizations
NSS	National Security Service of Armenia
OGP	Open Government Partnership
OSCE	Organization for Security and Co-operation in Europe
OSF	Open Society Foundations

PDPA	Personal Data Protection Agency
RAU	Russian-Armenian University
RUEA	Republican Union of Employers of Armenia
SCC	Supreme Certifying Committee
TIAC	Transparency International Anti-Corruption Center
UATE	Union of Advanced Technology Enterprises
UN	United Nations
UNDP	United Nations Development Program
UWC	United World Colleges
WB	World Bank
YCCD	Youth Cooperation Center of Dilijan
YIC	Youth Initiative Centre
YSMU	Yerevan State Medical University
YSU	Yerevan State University

open data in Armenia