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RfP 15/01172 - Data Revolution Ecosystem Mapping in the Republic of Moldova/ Cartografierea ecosistemelor pentru Revoluția Datelor în Republica Moldova

National Report

This report has been developed with the support of UNDP Moldova in the framework of the activity on data ecosystem mapping in the context of 2030 agenda, implemented in cooperation with the State Chancellery and the National Bureau of Statistics of the Republic of Moldova.

Implementing partners: CIVICUS Management and Development Company (Romania), Information Society Development Institute (Moldova)

June, 2016

List of abbreviations

CEE	Central and Eastern Europe
CIS	Community of Independent States
CPA	Central Public Authorities
EU	European Union
EUROSTAT	Statistical Office of the European Union
GD	Government Decision
IATI	International Aid Transparency Initiative
ICT	Information and Communication Technologies
IDC	International Data Corporation
IDEA	Individuals with Disabilities Education Act
IDSI	Information Society Development Institute
ISCO	International Standard Classification of Occupations
IT	Information Technology
IT	Information Technology
LPA	Local Public Authorities
M&E	Monitoring & Evaluation
MDG	Millennium Development Goal
MF	Ministry of Finance of the Republiv of Moldova
MTIC	Ministry of Information Technology and Communications
NBS	National Bureau of Statistics
NSS	National Statistical System
NUTS	Nomenclature of Territorial Units for Statistics
OGP	Open Government Partnership
PAMED	Policy analysis , monitoring and evaluation division
PGRAP	Government platform for registries and permissive documents
RM	Republic of Moldova
SDDS	Special Data Dissemination Standard
SDG	Sustainable Development Goals
UN	United Nations
UNDG	The UN Development Group
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNSTAT	United Nations Statistics Division
USAID	United States Agency for International Development

List of figures

List of tables

Table of contents

Section I. "Data Revolution" and its relevance in the context of Moldova

1.1. About Data Revolution

1. The new Agenda 2030 for sustainable development[1], universally adopted at the UN Summit (25 to 27 September, 2015) with the 17 Sustainable Development Goals (SDGs), which entered into force on 1 January 2016, requires collective action, at all levels, by establishing partnerships with civil society, the private sector, international development agencies and philanthropic organizations, in order to address current challenges and to support an integrated approach to sustainable development, to address inequality and discrimination as a central element in achieving the overarching imperative of "no one left behind."

2. The United Nations Secretary General's Post-2015 High-level Panel on the Post-2015 Development Agenda called for more evidence-based development policy-making, better availability of quality data and statistics, and strengthened accountability of development stakeholders, in other words, a "Data Revolution for Sustainable Development".

3. Agenda post-2015 believes that the support and expertise from academia, private sector and civil society, encouraging innovation as an approach and / or instrument in producing statistical data as a critical element for strengthening national statistical offices for the revolutionary use of data and exploring new technologies and innovative approaches[2]. In this context, will be useful to conduct a mapping of the data ecosystem describing the current situation and submitting a needs analysis for the achievement of a data revolution as an essential element in the decision-making process.

4. We, thus, define data revolution as the analysis and decision-making process for the sustainable development of society and the world, by way of using the existing data sources, as well as attracting other data sources and promoting free access to these. Data Revolution can be carried out by stakeholders who have responsibilities with regard to data (called "data communities") and which interact with each other through various institutions, with effective enforcement of laws and policy framework and the use of innovative technologies, thus creating a "data ecosystem". To support a coordinated and coherent process with regards to the implementation of the SDGs worldwide, a framework for monitoring and evaluating the progress has been developed, and has established targets and indicators for each objective. The monitoring process requires commitment from the authorities, respectively from the community in general, and the existing capacity to collect, process and use the data by each country.

5. SDGs national transposition is called "nationalization" and also requires a joint effort from all data community stakeholders (authorities, statisticians, community), for the inventory of the situation, establishing indicators for monitoring and evaluation of the national targets. UNDP launched itself in the promotion of the SDGs, and from September to December 2015 held presentation and information sessions at the level of the Government, social and international development partners, central government of the Republic of Moldova, preceding the process of linking national strategic objectives to SDGs ("SDG nationalization / localization").

6. Since data revolution represents the process for monitoring the progress and response to SDG challenges, involving stakeholders in Moldova, UNDP Moldova has launched an activity, as part of a global initiative undertaken in 7 different countries, for mapping /

[1] link https://sustainabledevelopment.un.org

[2] **Data for Development.** An Action Plan to Finance the Data Revolution for Sustainable Development, Sustainable Development Solutions Network a Global Initiative for United Nations,

inventory of the data system in each country, required for measuring the sustainable development progress. Its overall objective is to assess the availability of data and institutional modernization capacity needed to implement the development agenda post-2015.

7. The evaluation shall cover the official statistical capacity, capacity at the level of institutions (the regulatory and policy framework on data[3], human, information and financial logistics resources), premises and obstacles for multi-stakeholder engagement on data for implementation and monitoring of the SDGs, the role of innovation and new technologies, the infrastructure requirements for improved collection, dissemination and use of data, and efforts to support the creation of a national legislative framework for monitoring and accountability of development delivery.

8. This report displays the results of the evaluation expressing, on the one hand, an overview of the situation at the national level of strategic documents and the relationship thereof with the SDGs, the data model ecosystem applied in Moldova for public policy decision-making, progress on society development and monitoring by statistical indicators, existing legal provisions and processes for monitoring and reporting, the spectrum of stakeholders, current relations and procedures in the Republic of Moldova on data production and use and recommends, on the other hand, future actions at the national level for achieving data revolution.

1.2. Approach and the means employed for mapping

1.2.1. The methodology applied

9. The UNDP initiative of Data Revolution Ecosystem Mapping in Moldova, which is an important component of implementing the Sustainable Development Goals, was carried out through a project which ran from February to May 2016 and precedes the nationalization / localization SDGs in Moldova.

10. Defining data revolution, as attracting and using existing data sources and new data sources to promote free access to these and to fully integrate them into the analysis and decision making process for the sustainable development of the society, involves on the one hand, recognizing the importance of data and their availability, the commitment of holders to grant free access to these in due time and in the form required by users, and on the other hand, the development of human and logistics and technological capacities of data users for their integration into the decision-making process.

11. The methodology proposed for the implementation of the project sought to identify ways of obtaining statistical data for the purposes of needs assessments and to support awareness of the responsibilities carried by stakeholders involved in sustainable development and in developing evidence-based policies, or in other words, "Data Revolution for Sustainable Development."

12. In this respect five focus groups have been organized via workshops in the economic, social, environment and energy areas and also, in civil rights and governance, and a mixed group that included organisations/institutions, including the private sector, not listed above.

13. Through the activities undertaken (workshops, analysis by questionnaires), was pursued capturing the perspective, experiences and challenges of these categories of institutions / stakeholders regarding data use or production and identifying synergies and opportunities for collaboration among them. The opinion of data users and data producers was consulted during discussions and tasks within the workshops and dedicated questionnaires (online and on paper) and further reinforced the findings and observations in this report.

[3] Here the open data shall mean data that can be opened to the public in compliance with personal data protection, state secrets, etc.,

14. The overall objective of the mapping project is to assess the availability of data to measure the achievement of SDGs in an inclusive and participatory manner in Moldova. It analyses and assesses the capacity and modernization needed to follow the development agenda post-2015, the structure and stakeholder involvement, the use and importance of data and the mechanisms employed in the decision-making process.

15. The evaluation results are presented in the National Report, which presents the analysis of the Moldova data ecosystem and confirms the situation of the national data ecosystem components, identifying parties/institutions interested in data, relationships, rules and processes that bind them, legal and regulatory framework that facilitates or not the use of data exchange, the capacity available or required by the parties, as well as the technological foundations underpinning thereof with regard to monitoring and implementation of the SDGs.

16. The analysis was conducted from the perspective of: a) the existence and functioning of the legal framework and regulations on the production of official statistics and data processing and the use of data in decision making; b) availability and operability of the information technology and communications systems; c) observing and identifying the situation of the capacity in human resources involved in producing the data and the need for training for the use of data; d) the availability and allocation of organizational and financial resources for the data production process and the use thereof in decision-making; and e) identifying and emphasizing innovative ideas and solutions suggested by the data communities for monitoring and evaluating the implementation of Sustainable Development Goals.

1.2.2. Implementation partners

17. The success of the actions proposed by the project lies in close links with the support and involvement to perform the activities by public bodies responsible for implementing and monitoring SDGs. As partners for mapping data ecosystems, the following entities have been directly involved in the project: the State Chancellery, the National Bureau of Statistics, e-Government Centre.

18. UNDP Moldova, the coordinator and financier of the mapping project, as well as facilitator for project actions, has used the services of the Institute for Development of Information Society, founded by the Academy of Sciences of Moldova and the Ministry of Information Technology and Communications, as a member of the consortium led by CIVICUS Management & Development Company, which implements the project.

19. The implementation of the project has benefited from leadership and coordination from the State Chancellery and support from stakeholders (ministries, agencies and other public institutions, private sector, civil society organizations), including by providing responses to the questionnaire on Data Revolution Mapping and participation in workshops to identify needs and solutions, and assuming the commitment on the production of indicators and involvement in monitoring the SDGs.

1.2.3. Activities completed

20. The results targeted by the project were achieved by conducting activities agreed upon with UNDP and the State Chancellery of Moldova from 15 February to 15 May 2016:

a) a desk review of existing and available literature and information on Data Revolution vs. Moldovan context that allowed the observation of the applicability / feasibility of SDGs locally and the data ecosystem model description;

b) identifying stakeholders involved and establishing a list of data communities, preliminary to the nationalization and localization of SDGs;

c) preparing a map of SDG indicators, available in the national statistical system of Moldova;

d) conducting a consultation by questionnaires on data revolution;

e) supporting workshops held with data communities on SDG objectives and indicators;

f) drafting the National Report on mapping of data ecosystem; and

g) public consultation on the National Report and its completion with the observations and recommendations from participants.

21. The results of the actions have materialized the survey about data revolution, five workshops on SDGs and data revolution for 118 public and private organizations, compiling a list of innovative ideas on the collection and publication of data for SDGs monitoring purposes and the report of which information is presented further.

a) Desk Review

21. The mapping of the data ecosystem began with the desk review on strategies and plans of Moldova's development, progress reports on their implementation and monitoring and evaluation activities in collaboration with civil society, academia, the private sector and citizens. The desk review resulted in the report *"Desk review on data ecosystems in Moldova" RfP 15/01172 - Data Revolution Ecosystem Mapping in the Republic of Moldova*, in March 2016, from which we will further expose the main observations and conclusions.

22. The Review has allowed an overview on the state of data ecosystems, without claiming to be exhaustive, but which in conjunction with the requirements and international best practices on Data Revolution provided a variety of information for analysis, for a coherent approach for the project implementation as well as information on best practices and lessons learned that along with project results will be used for the nationalization and localization of SDGs, and harmonization of indicators to be reported by Moldovan authorities.

23. The Review covered strategies, documents and reports available nationally and internationally, on the areas of development of the Republic of Moldova (see Annex 1- Documents studied), correlated with the Millennium Development Goals (MDGs) and by comparison with the requirements of data revolution to assess the possibilities of monitoring and reporting SDGs progress, but also in relation to those.

b) Identification of ecosystem stakeholders

24. Analysis of decision-making in Moldova has allowed the identification of the stakeholders involved in implementing public policies and implicitly in the future data revolution. Thus, stakeholders and all those who initiate and promote public policies were considered (public institutions and authorities, parliamentarians) producers, keepers and disseminators of statistical data used to justify and substantiate public policies as well as social, development and debate partners and those who represent society in relation to government, as well as private sector using data for purposes of development decision-making (see Annex 2 - Stakeholders of Data Revolution). Starting from the interest stakeholders show in relation to data, they can also be identified by affiliation to the following categories: data producers (those involved in generating or collecting data), data users (those who process and analyse data for various purposes) infomediaries (those who take over and use, publish data to inform the general public), "data subjects" (the stakeholders the data is about) and "data buyers" (those who commission and pay for data collection as well as those who run data as development efforts).

25. Subsequently, the following stakeholders, grouped by data communities were considered:

i. State Chancellery – initiates and promotes public policies and legislation and coordinates strategic policies and planning, as well as the post-2015 agenda in Moldova and is one of the main data users.;

ii. National Bureau of Statistics – the core of the national statistical system, with considerable experience in statistical processes and a large number of reporting indicators in monitoring the implementation of SDGs, recommends and coordinates the production of official statistics, validates SDG related statistical indicators or those available nationally and indicates alternative sources of data collection. NBS is a data producer, holder and user;

iii. Ministries and public agencies – as holders or producers of administrative data, legislative initiators or policy developers, have a direct responsibility for identifying SDGs under national strategies and for the future proper reporting on the achievement of these indicators, but also as data users;

iv. Centre for e-Governance – manager of open data portal in Moldova and coordinator of e-transformation processes of the public administration, supports public authorities open data and is the main partner of ministries in disseminating data; the main national infomediary;

v. Local public administration – implementer of national policies locally (education, health, social, environmental, utilities, agriculture, public safety, etc.) and has direct contact with citizens as the main beneficiaries of sustainable development strategies and is directly interested in using data for public policy with immediate local impact;

vi. Academia, civil society, as holders of expertise on data in the areas of their activity and who can mobilize informational resources for data revolution, respectively that together with mass media monitor the outcomes of the governance to increase its accountability[4], and other data communities as part of filling in the gaps on monitoring SDGs and which are considered consultation partners on the process the policy development.

vii. International donors – involved in implementing projects that correlate with sustainable development and requiring monitoring and correlation for implementation and reporting with other stakeholders in Moldova; will use and produce relevant data in making decisions at local level.

viii. Private sector representatives, as data users for business development, but also as generators of raw data or data subjects that generate a large part of economic statistics.

c) preparing a map of SDG indicators, available in the national statistical system in Moldova;

26. By reviewing the strategic documents and corroborating thereof with the SDGs specificity, targets and indicators related to those, it was found that some of them are not applicable to the context of Moldova. The number and composition of SDG indicators listed by UN documents exceed the nationally produced statistics which resulted in mapping the indicators.

27. An inventory of available statistical indicators at the national level developed by the NBS and other data producers and their comparison with the 231 SDG indicators published by the United Nations Economic and Social Council[5], has been resorted.

28. This inventory allowed, on the one hand, the identification and consideration of 211 SDG indicators applicable nationally based on their availability according to the name of the indicator, however not the metadata, which currently are not completed for all indicators and are under review globally. This inventory attempted to estimate the completeness of statistical indicators in the context of their availability not only overall, but also by the

[4] See Agenda 2030 - "keep governance accountable" function incumbent to academia, civil society and mass media.
[5] Report of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators, E/CN.3/2016/2, 17 December 2015

recommended disaggregation level. Thus, 70 indicators are deemed to be fully available and 36 partially available, which means they cannot be disaggregated. Along with the identification of the authority responsible for collecting data, for each indicator the data source for the available indicators has been defined, and also for the missing ones, as well as reconfirming or identifying the relevant stakeholders who may participate in monitoring the implementation of the SDGs, and consulting thereof within ongoing workshops.

d) Conducting a consultation process by questionnaires on data revolution;

29. Needs analysis of data communities and the assessment of the state of play regarding the availability of data for monitoring the implementation of SDGs was conducted in the first phase by applying / delivering and filling in a questionnaire dedicated to target respondents (identified data communities).

30. The consultation process has been backed at the State Chancellery level, which officially advised on SDGs, mapping process and data revolution and guided all public authorities in the country on filling in the questionnaire, whether online or off-line. Questionnaires were filled in by 118 organisations over a period of 15 days.

31. The questionnaire was divided into 4 sections and allowed the collection of information on: i) the interest of stakeholders on the SDGs and their targets; ii) production / data usage process and data availability, the use of these data in decision-making; iii) structure and availability of human resources and its qualifications; iv) ICT equipment and development needs in the field; v) other types of information that were useful in the needs analysis (see Annex 3 - Questionnaire on Data Revolution).

32. Information collected from respondents allowed the determination of tables and / or graphic information of findings (see Annex 4 - Results of the Data Revolution questionnaire) used in needs analysis and development requirements (legislative, procedural, human resources skills, ICT).

33. Questionnaires were filled by a variety of participants in the process of working with data: specialists, LPA employees, teachers, experts. A relatively large proportion of the questionnaires were filled in by people in decision-making positions (47%), which demonstrate the commitment to the data revolution, but may also indicate an increased centralization at the administration level. Filling a quarter of the questionnaires by IT staff shows that these departments have an important role in data processing and the future policies in the data revolution will have to rely on massive involvement of staff in IT departments in this process.

e) Conducting workshops with data communities on SDG objectives and indicators;

34. Five workshops have been conducted by means of consultation at the level of Data Ecosystem Mapping Project. These workshops were attended by representatives of data communities by large thematic areas as a result of SDG grouping under integrated implementation approach: economic; social; energy & environment; citizens' rights and administration, and were designed to identify:

i. existing capacity and the potential for data production / use;
ii. needs on: legal and procedural framework adjustments; IT and communications infrastructure; human resources and skills required for the production / use of data, administrative mechanisms and financial resources to achieve data revolution;
iii. alternative and innovative ways of producing data to measure SDG related indicators which are not covered by national statistics / administrative data;

iv. identifying, addressing and recommending the process to follow to develop policies that respond rapidly to identified gaps between SDG target indicators' values and those measured during the implementation of national strategies.

35. The supporting structure of the workshops included information about SDG and their targets, a description of the areas (economic, social, environment and energy, civil rights and governance) and the situation of SDG indicators by area versus availability of indicators at the level of Moldova and data holders, as well as data sources to secure the indicators requested, the presentation on the functioning of Open data public system managed by e-Government Centre. Following the workshops, a session of work in groups was conducted where participants responded to tasks prepared on the resources for the data revolution, mechanisms of decision making and usage of data, innovative methods of collecting and processing data with the use thereof for public policy decisions (see Annex 6 - Participants responses to work assignments).

36. A total of 188 people attended the workshops: 93 women and 95 men, with different positions from central public authorities (including 13 of the total of 16 ministries- 52% of participants), enterprises (public or private financial institutions - 20%), academia (11%), local governments and development partners (6% each). The participation structure by stakeholders, positions of representation, expertise and powers is set out in Annex 5 - Information about workshops participants..

37. The presence and involvement of LPA representatives is a positive signal. Although CPA plays a crucial role, one of leadership, partnerships are absolutely necessary, including those with LPA. The absence of media representatives at these workshops can be explained by their low interest for such events, but given the role the media plays in promoting data generation, especially in the use of data and public education, aspects of collaborating with the media and attracting it into data revolution processes are particularly important.

f) drafting the National Report on data ecosystem mapping

38. The results obtained from applying the methodology and desk review activities, consultation with stakeholders by way of questionnaires and workshops have allowed the concentration of information in the national report, based on a collaborative and consultative process with the beneficiary.

39. The report provides information on the model of Moldova data ecosystem and findings and recommendations drawn from the needs analysis to resolve the gaps in achieving data revolution.

g) The public consultation of the national report, and its completion with observations and recommendations from participants

40. The consultation process of the National Report was materialized by discussing it with the stakeholders who brought observations, comments and additions. The Consultation took place online and by way of open discussions within the national workshop held as a project activity. Once analysed, the observations and recommendations were included in the final report submitted to the beneficiary and published by it.

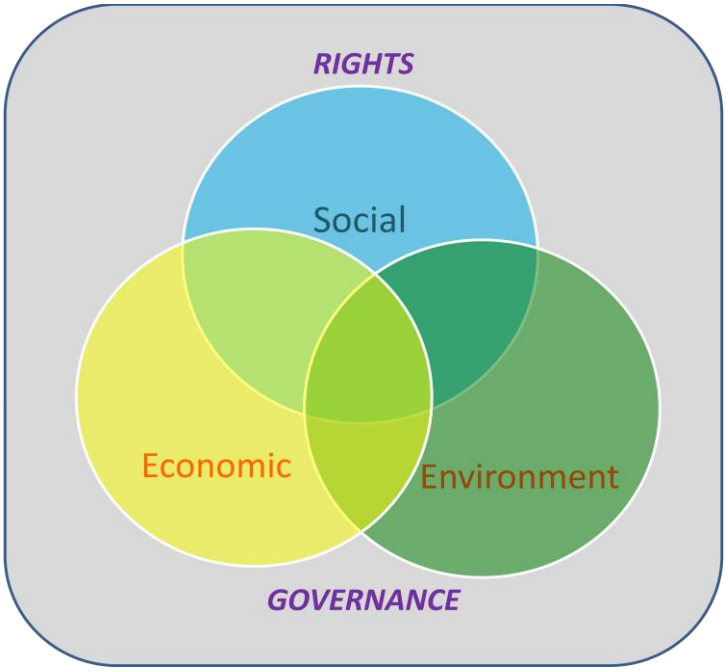
Section II. SDGs and data ecosystem in Moldova

2.1. SDGs Mapping

41. The SDGs mapping process involved the preliminary analysis of their availability in terms of targets (169 targets) and indicators (230 indicators). Compared to national specificities it was found that all SDGs are applicable for Moldova, including SDG 14 "Life under water", which although at first it appears to be irrelevant, it, however, contains some targets and indicators existing at the national level. When referring to SDGs indicators, out of a total of 230 indicators that were included in SDGs, 211 were considered relevant.

42. SDGs preliminary applicability / feasibility for Moldova was assessed by the project team of "Data ecosystem mapping in the Republic of Moldova" by examining and analysing nationally, by means of the "desk review" method, the availability of indicators assigned to each SDG. The assessment criterion applied implied the identification of the indicators in the official data sources nationally, matching by "The name of the indicator," but not necessarily by way of defining and calculating (metadata). Such an approach was conditioned by the fact that not all indicators globally have methodologies for calculating[6]; some indicators are still at the consultation stage for both their relevance, as well as in the context of agreeing upon the methodological concept.

Figure 1. SDGs mapping from the perspective of Sustainable Development concept elements



Surce: Adaptation by authors after MIT, The Concept of Sustainable development[7]

43. SDGs mapping has also aimed to identify the stakeholders who are responsible for the data, which could potentially be part of the data community for the national data ecosystem. In order to facilitate the consultation process within national workshops, SDG indicators,

[6] 79 indicators of the global set are included in the category of those that do not have developed and internationally agreed methodologies http://unstats.un.org/sdgs/files/meetings/iaeg-sdgs-meeting-03/Provisional-Proposed-Tiers-for-SDG-Indicators-24-03-16.pdf

[7] Masachusets Institute of Technology, The concept of sustainable development: "Sustainable development aims to balance three elements: economic, environmental, and social",, Adams, Eric; Connor, Jerome; Ochsendorf, John, Fall 2009

depending on their profile in the context of the concept of sustainability[8], were conventionally divided into three main areas: **economic, social and environmental**. At the same time, it should be noted that unlike the MDGs, there are indicators within SDGs that cannot be quantified (such as the number of ratified Conventions of the International Labour Organisation (ILO), by type of convention, the number of countries with national legislation statistics observing the fundamental principles of official statistics, etc.). Additionally, indicators have been identified that characterize certain fundamental individual rights and that could not be solely attributed to just one area. In this way, he fourth area **rights and governance was conventionally created,** which respectively touches all three areas mentioned above, leading to the conclusion that an integrated approach is needed to implement the SDGs, compared to a standalone one (silo type) (Figure 1).

44. When analysing SDGs, according to the distribution of indicators on the four areas mentioned earlier, it was found that an SDG can refer to several areas (e.g. objective no. 1- Without poverty, covers social and environmental areas), and many SDGs can be assigned to the same area (e.g. the social area includes several objectives; Objective no. 1 - Without poverty, no.2 - Zero hunger, etc.) (Figure 2). This indicates the need for a comprehensive approach to the phase of nationalizing the SDGs, including with reference to the establishment of the national inter-sectoral monitoring and evaluation system.

Figure 2. Distribution of SDGs by area

	SUSTAINABLE DEVELOPMENT GOALS	Social	Economy	Environment & Energy	Civil rights & Governance
1	No poverty	■		■	
2	Zero hunger	■	■		
3	Good health and well-being	■	■		
4	Quality education	■			■
5	Gender equality	■			■
6	Clean water and sanitation			■	■
7	Affordable and clean energy			■	
8	Decent work and economic growth	■	■		■
9	Industry, innovation and infrastructure		■	■	
10	Reduced inequalities	■	■		■
11	Sustainable cities and communities			■	■
12	Responsible consumption and production		■	■	
13	Climate action			■	
14	Life below water		■	■	
15	Life on land		■	■	
16	Peace, justice and strong institutions	■			■
17	Partnerships for the goals		■		■

Source: Research of NBS, CIVICUS MDC și IDSI, 2016

45. Since SDGs indicators imply not just their availability, but also, inclusively, the need to be reported according to certain disaggregation criteria, in the process of mapping the concept of availability, three distinct categories were delineated:

[8] Masachusets Institute of Technology, The concept of sustainable development: "Sustainable development aims to balance three elements: economic, environmental, and social",, Adams, Eric; Connor, Jerome; Ochsendorf, John, Fall 2009

i) available indicators: they exist at a national level, their name is similar or very close to the name of indicators (e.g. the proportion of the population living below the national poverty line, disaggregated by age and sex);

ii) indicators available in part: exist at a national level, their name is similar or very close to the name of indicators, but no disaggregation is required (for example at the national level there is the indicator on the percentage of children under o 5 years, which are developed properly in terms of their health, education and psychosocial well-being, while according to the SDG indicator, it must show sex-disaggregated data);

iii) missing indicators: are not currently produced nationally (i.e. the proportion of people who own a mobile phone, by gender).

46. As mentioned, the process of mapping the indicator was based on the "Name of the indicator" criterion, respectively some national indicators were considered available given that globally there is no sound methodology for calculating them. For instance, the indicator on the percentage of children / young people that at the end of primary education have e a minimum level of competence in reading and mathematics, according to gender and location, there is currently no internationally agreed methodology, but this indicator was deemed partially available nationally, given that similar indicators currently exist according to the name of the indicator, but without the disaggregation in question.

47. Thus, out of 211 indicators that are relevant for Moldova, 70 indicators (33%) are fully available and 141 indicators (67%) are indicators considered partially available or totally missing. At the level of the SDGs, out of 211 indicators identified as applicable to Moldova, most are found in the Social area (69 indicators) and the Rights and Governance area (56 indicators). However, if we refer to the availability of indicators, we find that most data collection efforts should be directed toward the areas of Environment and Energy, and Rights and Governance (Table 1).

Table 1- The availability of indicators by area

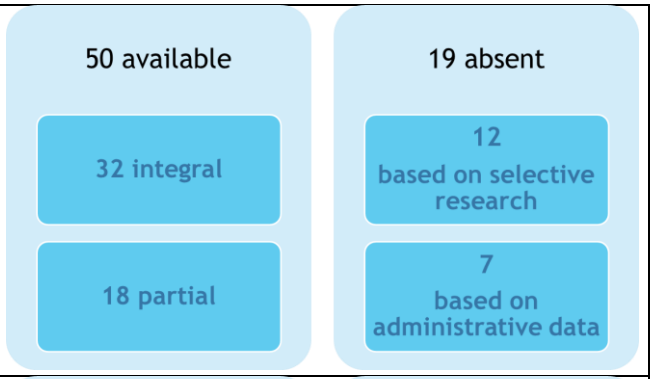
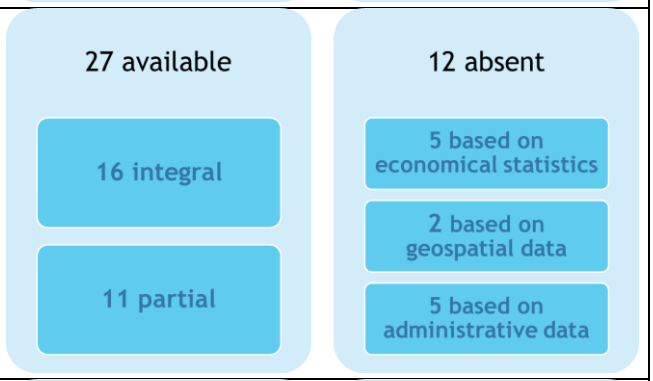
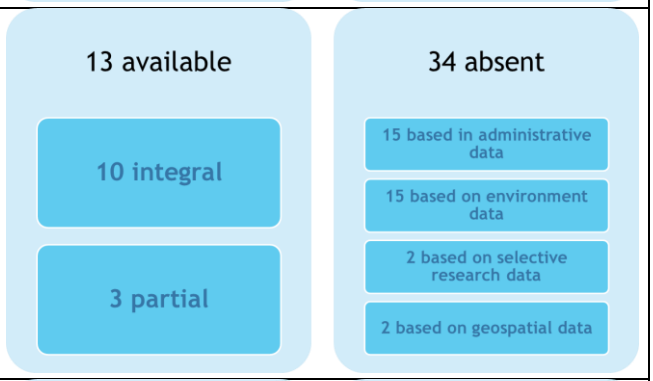
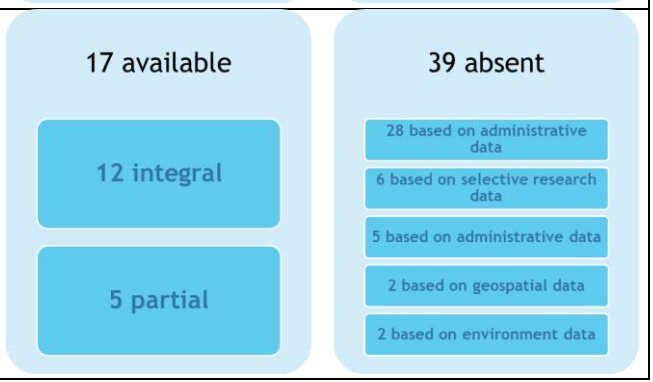
Domain/Indicators	Data Producers	Data Holders	Monitoring & Evaluation data holders
Social	46	55	56
Economic	27	29	28
Energy & Environment	8	34	33
Rights and governance	10	32	31
Total	**91**	**150**	**148**

Source: Research of NBS, CIVICUS MDC şi IDSI, 2016

48. For all the nationally relevant indicators, existing or potential sources for obtaining data have also been identified, according to the typology developed by the Independent Group of Experts on Data Revolution in the context SDGs[9]: a) selective research in households / population studies; b) censuses; c) administrative data: registries, databases, internal records for a particular purpose; c) data on marital status, statistics of vitality; d) geospatial data. From the perspective of data sources (Figure 3), it should be noted that for obtaining the missing indicators, the country will have to strengthen the quality and use of administrative data sources in the production of statistical indicators for all areas, but especially for Environment/Energy and Rights/Governance areas. This will require the development of mechanisms for cooperation and collaboration among all data community stakeholders according to different areas.

[9] http://unsdsn.org/wp-content/uploads/2015/04/Data-For-Development-An-Action-Plan-July-2015.pdf

Figure 3. The availability of indicators by area (detailed)

Social area out of 69 indicators considered to be SDGs for Moldova, only 32 indicators are fully available and 18 partially available, and of the 19 that, at the time of evaluation, are considered missing, 12 indicators can be determined on the basis of selective research and 7 based on administrative data.	
Economic area – out of 39 indicators considered to be SDGs for Moldova, only 16 indicators are fully available while 11 are partially available, and of those 12, at the time of evaluation, are considered missing, 5 indicators can be determined on the basis of economic statistics, 2 on the basis of geospatial data, and 5 based on administrative data.	
Environment and energy area – out of 47 indicators that are considered to be SDGs for Moldova, only 10 indicators are fully available fully while 3 are partially available, and of the 34 that, at the time of evaluation, are considered missing, 15 indicators can be determined on the basis of environmental data, 2 on the basis of selective research, 2 – geospatial data, and 15 based on administrative data.	
Area of civil rights and governance – out of 56 indicators considered to be SDGs for Moldova, only 12 indicators are available fully while 5 are partially available, and of the 39 that, at the time of evaluation, are considered missing, 6 indicators can be determined on the basis of selective research, 2 on the basis of geospatial data, 2 on the basis of environmental data, and 33 based on administrative data.	

Source: Research of NBS, CIVICUS MDC și IDSI, 2016

49. An important component of mapping SDGs is assessing the position of central authorities with reference to data ecosystem. In this context, for each indicator the institution responsible for collecting and producing indicators was designated as well as those who are responsible for monitoring and evaluating the strategic framework with reference to specific indicators. This stage involved the following activities:

i) the counterbalance of SDG indicators with the availability of indicators nationally, disseminated by the producers of official statistics (central statistical body, other

institutions producing official statistics) by means of statistical publications, web page, case studies carried out, informative and analytical notes, etc.; - *data producers.*

ii) the counterbalance of SDG indicators and targets with the availability of indicators within other producers / owners of data that are not part of official statistics – *data holders*;

iii) the counterbalance of SDG indicators and targets in with the availability of analysis, assessment and monitoring indicators related to the national and sectoral strategic framework and, respectively, the institution responsible for reporting – *responsible for monitoring and evaluation.*

50. Analysis of data availability by areas and stakeholders allows us to observe that a large number of SDG indicators (150) are in the possession of data holders or those institutions which are responsible for monitoring and evaluation of SDGs (148), compared to indicators in the possession of data producers (90), which should lead to a division of tasks and the efficient use of resources in the process of implementation and monitoring of SDGs, and reporting process (Table 2).

Table 2 - Distribution of SDG indicators by type of data producers and holders

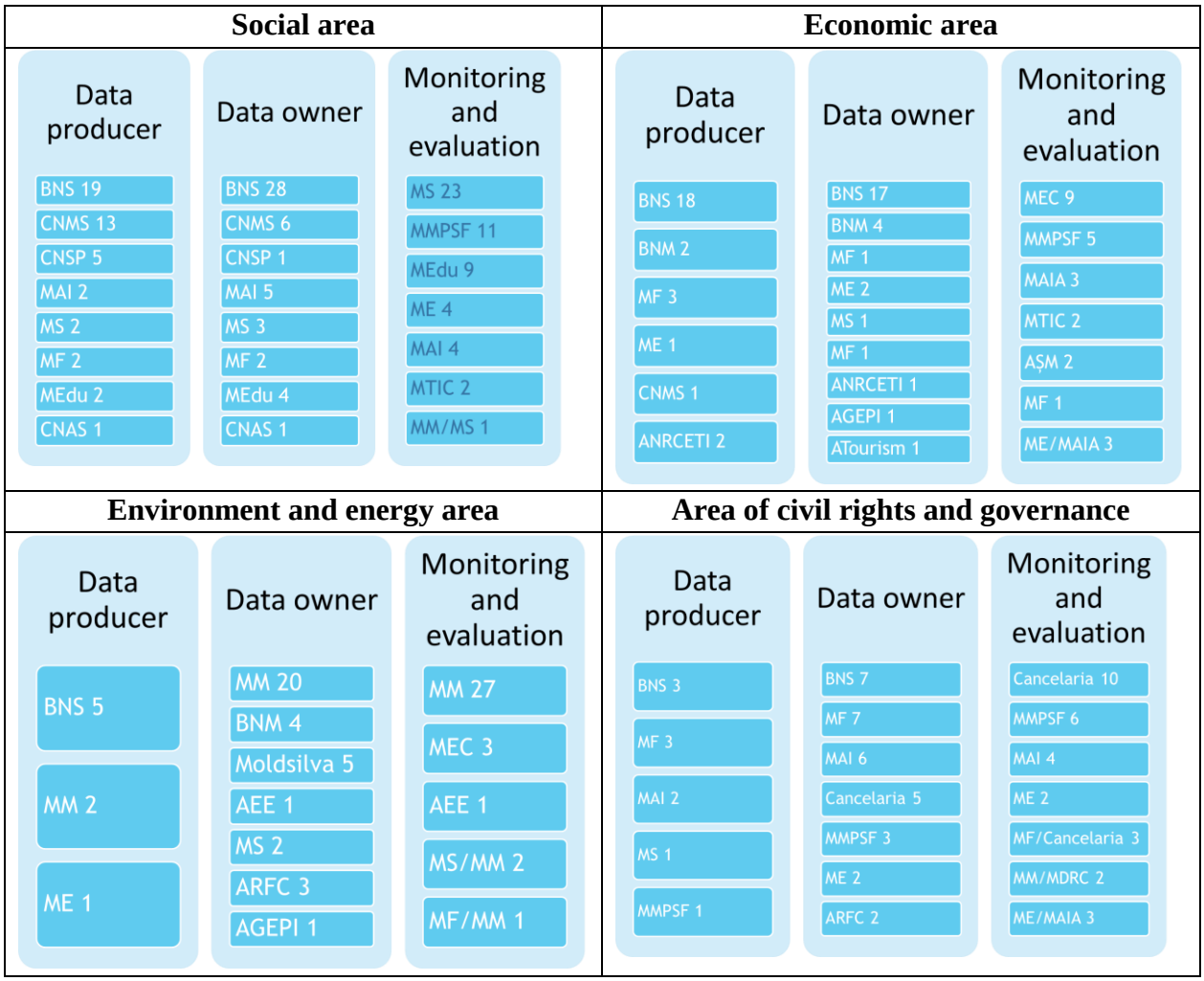
Domain/Indicators	SDGs considered indicators	Integrally available indicators	Missing indicators partially or totally
Social	69	32	37
Economic	39	16	23
Energy & Environment	47	10	39
Rights and governance	56	12	44
Total	**211**	**70**	**141**

Source: NBS, CIVICUS MDC and IDSI Research, 2016

51. Meanwhile, the distribution of indicators by categories of data producers and data holders and responsibilities in monitoring, by institutions, of the main stakeholders, allows for tasks to be identified for data collection and processing and can support the process of consolidating official statistics on the one hand, and observation of areas on the other, where alternative and innovative sources of data can and will assist in monitoring the progress of SDGs, and decisions to adjust implementation actions.

52. The data indicates (Figure 4) that in all SDG incumbent indicators that are relevant for Moldova, the leading producer of indicators is the NBS, which is responsible for producing 46 indicators, 19 of which are in the economic area, another 19 in the social area, 5 in the environmental and energy area and 3 in the rights and governance area. After this, comes the National Centre of the Ministry of Health, which is responsible for producing 14 SDG incumbent indicators. The leadership on the analysis and monitoring of SDG related indicators falls under the Ministry of Health, which has 30 indicators, of which 25 are in the social area, followed by the Ministry of Labour, Social Protection and Family (28 indicators) and the Ministry of Economy (27 indicators).

Figure 4. The tasks of collecting and processing data by public institutions - stakeholders



Source: NBS, CIVICUS MDC and IDSI Research, 2016

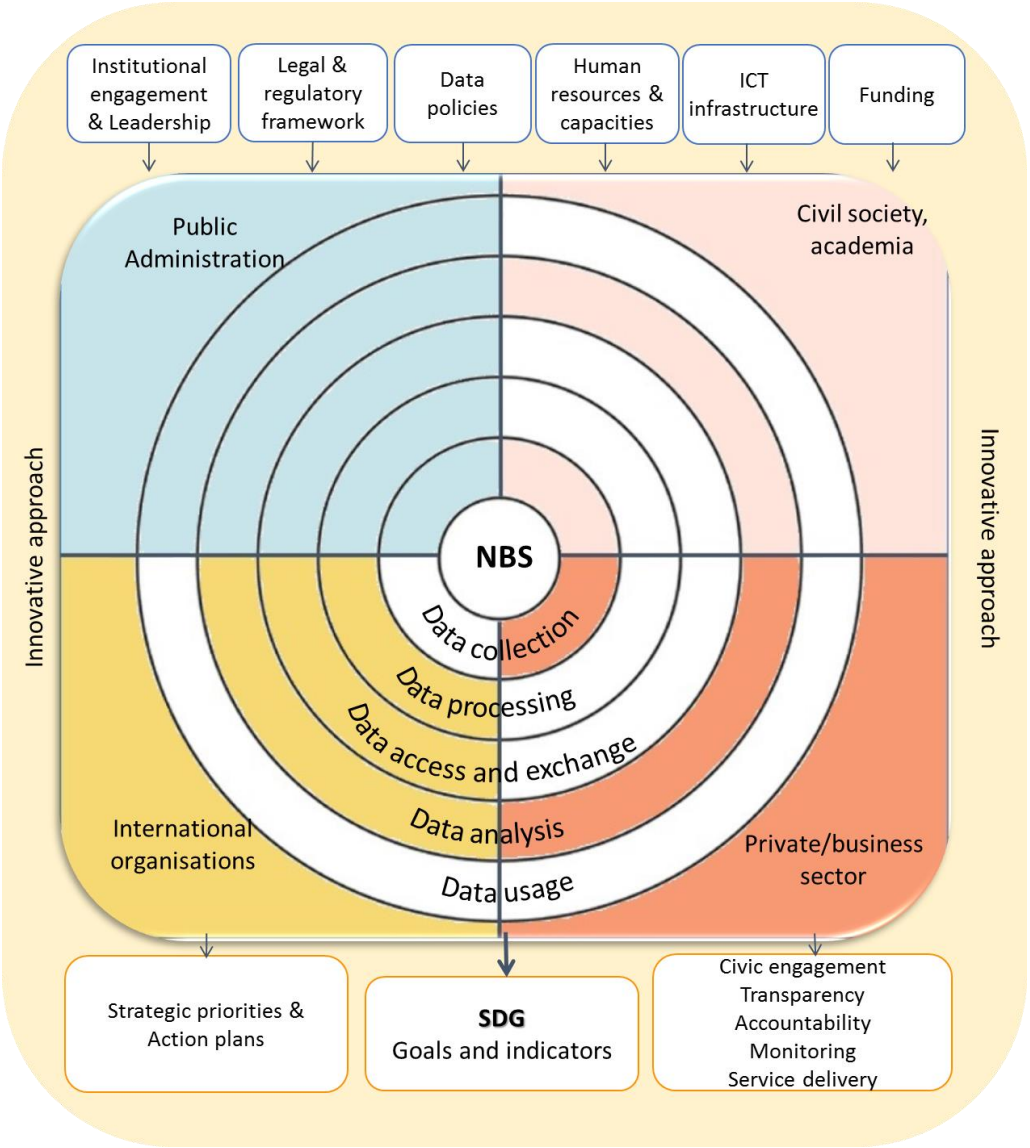
53. As a result of taking on SDGs, Moldova is to make major efforts in filling the missing indicators as well as in disaggregation that is considered relevant nationally. Another important aspect is the need to delineate, at a national level, the role of each institution responsible for producing and reporting SDG indicators. The efficient channelling of resources should consider delegating some responsibilities specific to data processes to only one institution, so as to avoid duplication of certain activities and reduce the reporting burden.

2.2. The data ecosystem model

54. Starting from the point of the feasibility of SDGs for Moldova, to their localization and data revolution, on all levels of decision-making where the country's strategic objectives are linked to SDGs targets, statistical information flows will include references to their indicators. In this way, the flow of information generated by the Moldova data ecosystem will always be linked to and included in the decision-making process.

55. A model of data ecosystem considered functional for Moldova would entail using data flows in decision-making by stakeholders, to secure the strategic priorities correlated with SDG targets and their implementation through a committed and engaging, responsible, transparent and monitored process with civic participation (Figure 5 - Data ecosystem).

Figure 5. Data ecosystem



Source: Authors own

56. The functioning of the data ecosystem for the proposed goal namely informed decision-making using the revolution data, highlights **the interaction of the stakeholders involved in decision-making** (government, civil society and academia, the private sector / entrepreneurial community , together with international partner organizations) and decision-driven resources (institutions, legal framework, data policy, human resources, infrastructure and ICT, financial resources), **using data and information production** (collection, processing, access and data exchange – dissemination, analysis and use of data) for **monitoring and evaluation of indicators** obtained in the course of implementation of action plans of strategic documents through **a transparent process and in partnership with civil society**, to adjust the national strategic objectives **by reference to the SDG targets**.

57. The central component of the data ecosystem is the **process of transforming data into evidence / tools to support public decisions**. The robustness of the transformation process, knowledge and its application by all stakeholders will provide a set of consistent data, coherent and useful for the decision-making process. From this perspective, the proper functioning of the data ecosystem entails an analysis and evaluation of processes for collecting, processing, accessing and data exchange (dissemination), analysis and use of data

for public policy and the use of approaches innovative and innovative solutions to ensure the necessary data and to meet the challenges arising from the data revolution.

58. Today, **data collection** can be an activity carried out by **any actor involved in the decision-making process**, respectively by the government and public agencies, civil society, academia and the private sector for various purposes of private or public interest and by using diverse methods and technologies. The Moldovan data ecosystem uses all data sources and has access to advanced technology to respond to requests for data collection necessary for the purposes of processing and dissemination.

59. Taking into consideration the efficient use of results obtained, **data processing** implies the application of standards on quality control, use of statistical and ICT capabilities for processing and archiving and application of methods and standardized formats for data, useful to end beneficiaries in targeted analysis. An important milestone in data processing is the application of standards that today are part of the working methodology of organizations that have responsibilities and accountability for data disseminated, respectively, NBS, government and international organizations. Exploring how data is processed will allow highlighting needs and challenges on the procedures, data policies, resources and infrastructure used by stakeholders and what should be covered, as requirements, by other partners in the data ecosystem for processing and making data available in an open, accessible and useful manner.

60. Data production is not and cannot be an end in itself, without ensuring **access and data exchange** - data dissemination - between stakeholders, and ultimately without the use of data in the decision making process. Dissemination should require an availability of data in open and reusable formats for the benefit of citizens and other stakeholders, so that the ultimate usefulness of data would not be altered. Highlighting dissemination methods, data formats, the availability of funds and resources to ensure the access and exchange of data produced by the stakeholders involved in processing, public administration in particular, is part of the analysis in order to provide necessary information for the analysis and use of data in taking informed decision for public policy purposes.

61. The substantiation and support of the decisions with arguments by all stakeholders, **government, civil society, academia, the private sector and international organizations**, implies a minimum activity for the analysis of data available in the ecosystem. Data analysis is performed by statistical tools by transforming data into useful information and evidence for policy evaluation. Using statistical tools and visualization techniques for data analysis, implies the existence of skills with personnel, of certain applications and a communication infrastructure, of financial resources and assigning tasks through operating regulations for the use of methodologies confirmed so that the data products are used in decision-making.

62. **Data usage** becomes the critical component in the decision-making process within the ecosystem. Assessing the current situation of the use of data within the ecosystem will allow the development or strengthening of human resources, procedures and partnerships, so that data can be used to justify policies, monitoring implementation and reporting progress, for empowering citizens in holding the stakeholders involved, i.e. the **public administration**, responsible for decision-making actions and responsible for the results obtained with the resources allocated for the implemented actions.

63. Mapping the data ecosystem will exhibit the **interaction image of various data communities with** nationally identified **statistical processes**: i) data subjects (respondents) this category shall include all the stakeholders identified under the data ecosystem, as well as the citizens, participants to the data collection process; ii) data producers, respectively, stakeholders (public administration, civil society, academia and the private/entrepreneurial sector) and NBS, which generates or collects data; iii) data processors and data

communicators, as well as data commissioners (those that purchase / finance data collection / production services), i.e. the public administration, NBS and international organizations, those who process raw data and turn them into usable information which can be transmitted and accessed by the general public; and iv) data users, i.e. those stakeholders who analyse data and use them for various purposes, especially for public policy decision making.

64. From the perspective of implementing and reporting SDGs,, the distribution by institutions and groups as producers, owners and monitors of indicators will deliver a better allocation of tasks and responsibilities regarding the implementation and reporting of SDGs. Preliminary to this approach it is useful to analyse and **evaluate the means, resources and tools available to stakeholders** that can be used in data revolution.

65. Current data is not sufficient to monitor the implementation of SDGs and therefore, in order to adjust the national policy and strategic priorities framework, in line with SDG targets, a data revolution is needed. This entails an **innovative approach to statistical processes** to increase the volume of data and the speed of data production, increasing the number of data producers and data dissemination, data mining of data supported by new technologies (mobile phones and "Internet of Things") and from other sources, such as quality data and perceptions or data generated by citizens.

66. Meanwhile, each stakeholder involved in data production and use, part of the **decision-making and SDG implementation monitoring**, as well as the progress of the targets, respectively: public authorities (Parliament, Government, National Bureau of Statistics, ministries and agencies, other central and local public institutions), civil society, media, private sector, academia, international organizations, have, as **a sole mandate, to carry out this process in a responsible and transparent fashion**, granting access to information and civic engagement for progress monitoring.

67. Thus, by **mapping the data ecosystem** we will notice whether it is operational to monitor the progress of SDGs, namely if it performs the whole process of producing data to assess the achievement of SDG targets and indicators. The operational requirements of the ecosystem should be based on an institutional commitment of stakeholders and a committed coordination for the implementation of SDGs and revolution data (today undertaken by the Prime Minister of Moldova), to take place under a recognizable legal and regulatory framework based on a set of policy data (statistical principles) that are understood and assumed, for which the interested stakeholders would allocate (human and logistics capacities) resources, to optimally use the data infrastructure and ICT in a continuous operation, which is based on a publicly supported and sustainable funding throughout SDG implementation.

Section III: Data Ecosystem Mapping Outcomes

3.1. National priorities - overview

68. Moldovan society is undergoing a process of transformation and correlation of development strategies toward international and European Union principles and values. The long-term planning process was and is based on the correlation of national strategies and priorities by areas with international agreements to which the country is a party.

69. For example, national strategic documents adopted during the reference period of the **MDGs** (2000-2015) sought to link the long-term objectives and contain a monitoring and evaluation framework using the principles and indicators of MDGs. This approach to strategic policy planning has led to the creation of institutionalized working mechanisms for strategy development (see *Rules of elaboration and unified requirements for policy documents*)[10] and allowed capacity building and improvement of activities at the level of administration.

70. In the same context of long-term strategic planning, the Association Agreement between the European Union and Republic of Moldova signed in June 2014[11,] has become a reference document for the country's future development. Thus, the first National Action Plan for the implementation of the EU-Moldova Association Agreement 2014-2016 (NPIA), was adopted in October 2014 and in October 2015[12] the first interim report on the implementation of the Association Agreement EU- RM for the period 9/01/2014 – 9/01/2015, and a revised NPIA were approved by the Government[13].

71. The chapters of the Agreement are reflected in the **sectoral strategies** developed by Moldova in 2015 and are correlated with development objectives set out in the government's recent plans. The Agreement essentially represents the areas that need to improve and the issues to be solved in the economic, social, environmental and human rights areas, which, it should be noted, will directly or indirectly contribute to achieving certain SDG targets. The analysis indicates that the provisions of the Association Agreement with the EU, the National Strategy "Moldova 2020" and sectoral strategies address most SDGs considered applicable in Moldova: from SDG 1 to SDG 11, SDG 13 and SDG 16.

72. The strategic document of the national dimension developed in 2012, the strategy of economic and social development "Moldova 2020" was developed during the reference period of the MDGs, and focuses on seven (7) development priorities, which can be regarded as close to some of the 17 SDGs: "Without poverty; Education; Economic growth; Green energy; Infrastructure; Justice; Health and welfare." This way of defining objectives allows for the "Moldova 2020" strategy to be considered as long-term and also anchored to SDGs, or it has established indicators to monitor the intermediary progress for 2015, and final progress in 2020.

73. All sectoral strategies issued in the period 2012-2015 (nb - 25 sector strategies), covering key areas of society, namely: education, health, labour and social protection, justice, administration, agriculture, economy, environment, energy, home affairs, defence, etc., respond to SDG applicable and feasible targets for Moldova, as emerges from the analysis presented in Table 3.

[10] Government Decision No. 33 of 11 January 2007 on the rules of development and unified requirements for policy documents
[11] L 260, Volume 57, 30 August 2014, Official Journal of the European Union (EU).
[12] GD No. 808, 7.10 2014.
[13] GD No. 713, 15.10.2015.

Table 3 - Sectoral strategies and their correlation with MDGs and SDGs

Policy Documents	LINKS TO SDG, MDG AREAS		INDICATORS TO BE REPORTED		IMPLEMENTATION/ MONITORING	
	SDG it could address	MDG it referred to, initially	Monitoring framework	Matching SDG Inficators (Not at all; Partly; Fully)	Implementation Plan	Monitoring reports published?
Education Development Strategy for the years 2014-2020 "Education 2020" (GD nr.944 of 11.14.2014)	4, 5, 9, 10, 16.	no	yes	P	yes	yes
National Strategy for Agricultural and Rural Development for the years 2014-2020 (GD no. 409 of 06.04.2014)	2, 3, 8, 13, 16.	no	yes	P	no	yes
The national program of informatization of the sphere of culture for 2012-2020 (GD no. 478 of 04.07.2012)	4,8,11,16	no	yes	N	yes	no
The environmental strategy for the years 2014-2023	4,6,11,12,13,15,16, 17	7	no	P	no	
The development strategy of the national statistical system, 2015-2020	16, 17	no	yes	P	yes	no
The program on Interoperability Framework (GD no. 656 of 09.05.2012)	9, 16	no	yes		yes	yes
The development strategy of the health system for 2008-2017 (GD no. 1471 of 24.12.2007)	3	4,5,6	yes	P	yes	yes
Child Protection Strategy for the years 2014-2020 (GD no. 434 of 06.10.2014)	5, 4, 3	no	yes	P	no	no
Development strategy of rural extension services for the years 2012-2022 (GD no. 486 of 5 July 2012)	2, 8, 9	no	yes	P	yes	yes
The development strategy of the small and medium enterprises for 2012-2020 (GD no. 685 of 13.9.2012)	5, 8, 9, 10	1, 3	yes	P	yes	no
The development strategy of internal trade in Moldova for the years 2014-2020 and Action Plan 2014-2016 (GD nr 948 of 11.25.2013)	11	no	no	N	yes	no
Moldova's energy strategy until 2030 (GD no.102 of 02.05.2013)	7	no	yes	P	yes	no
Transport and logistics strategy for the years 2013-2022 (GD no. 827 of 10.28.2013)	9, 11	no	yes	N	yes	
Tourism Development Strategy "Tourism 2020" and the action plan for its implementation in the years 2014-2016 (GD no.338 of 05.19.2014)	9	no	yes	N	yes	no
Justice Sector Reform Strategy for the years 2011-2016 (GD no. 231 of 25.11.2011)	16, 10, 8	no	yes	P	yes	yes
The strategy of reforming the Security and Intelligence Service of the Republic of Moldova and the Action Plan for the years 2014-2018 (GD nr.230 of 10.10.2013)	16	no	yes	N	yes	no
National strategy for prevention and control of noncommunicable diseases for the years 2012-2020 control al bolilor netransmisibile pe anii 2012–2020 (GD No. 82 of 12.4.2012)	3	no	yes	P	yes	no
National Security Strategy of the Republic of Moldova (GD no. 153 of 15.7.2011)	1, 2,3,7,8,13, 16	no	no	N	no	no

Source: CIVICUS MDC and IDSI Research, 2016

74. We note that in the period 2012-2015, the National Strategic Framework was correlated with MDGs only for three (3) strategies aimed at: environment, health and SME sector. This low correlation process on the one hand can be explained by the fact that the very MDGs targets aimed at areas more restricted as compared to SDGs, on the other hand, during the given period some strategies which addressed the MDG targets were in the implementation phase and, respectively, are not found in the list of documents displayed in the table. Another factor that determines the level of national strategic framework correlation with MDGs is the reduced reporting on monitoring targets and actions, and respectively, the consolidation of this process.

75. Furthermore, implementation of strategies through measures and actions described in their operational plans was performed annually using human, logistics and financial resources of those responsible for the implementation process. It should be noted that the lack of

correlation between strategies and MDGs did not justify a direct link between MDGs and the budgetary process, respectively with the Medium Term Budgetary Framework (MTBF). In this context, we could say that the lack of justified MTBF funding for implementing a strategy linked to the MDGs has contributed to a decrease of interest in MDGs.

76. The National Strategy for Economic and Social Development "Moldova 2020" is under review and would allow, along with the commitment of country's leadership on the adoption of SDGs, to become the main SDG reference document for the future development of Moldova, regardless of the period for which it shall be issued (6-8 years). Connecting the "Moldova 2020" Strategy to SDGs will also allow the review of sectoral strategies at the level of country objectives and targets, of indicators and specific action for implementation.

77. Also, the recently approved (January 2016) Government Activity Programme for 2016-2018, contains some of the priority directions similar to SDG targets, namely: Justice; Economic growth; Clean Energy, Education, Health, and for the implementation concrete measures are set out leading to increased welfare, safety and quality of life for the citizens, eradicating corruption and ensuring the rule of law, personal security, accessible and cost-effective public services, social protection for vulnerable populations.

78. From the perspective of monitoring and evaluation of implementation, as seen from the analysis of national strategic documents, sectoral strategies developed from 2012-2015 (see Annex 1 - The list of documents studied) contain a monitoring and evaluation framework, which also includes a list of progress indicators and performance indicators.

79. The process of data monitoring and production for the sake of progress reporting is essential for the adjustment of the measures and actions of annual operational plans. Correlated with the recommendations of international strategic documents that Moldova has signed, it requires an alignment of sector strategies indicators with those proposed for SDGs, a situation secured only to a small extent at the moment.

80. Lessons learned in the course of the MDGs reference period, regarding the process for monitoring the progress in implementing the strategic objectives are helpful from the SDG perspective. Progress monitoring and reporting during the MDGs reference period, posed difficulties, as some indicators proposed for monitoring the progress in implementing strategies had definitions different from the recommendations for MDGs and data production failed to meet the reporting requirements.

Box 1. Lessons learned from the implementation of MDGs

In 2008 Moldova has developed the "gender sensitive harmonized set of development indicators" in the context of the Millennium Development Goals. Of these, 102 were based on available statistics; for 74 indicators the collection of data needed for their calculation was going to be amended; and for 37 indicators a new data collection was needed. Even though all the ministries and national institutions concerned were involved in the process, coordinated by the joint UNDP, UN Women, UNFPA "Strengthening the National Statistic System" project, and the set of indicators was approved by the NBS board, these indicators have never been properly applied as a basis for policy formulation, monitoring and evaluation, being also poorly used by relevant units within ministries.

81. At the national level, with reference to the implementation of MDGs, no work was observed on the side of data communities or entities / organizations outside the central government to support by their own means data collection, processing and reporting, as required by the indicators, since no other data sources were foreseen, except those officially provided by the public administration. This data request from limited sources could explain

the fact that the MDGs were little known at the local government level, in the state-owned enterprises or private sector, and by NGOs or academia[14].

82. It can be observed today that the Government, through the recently adopted strategic documents, pays attention to the **publication of data and information, strengthens statistical production, streamlines financial and statistics reporting processes and encourages participation and involvement of citizens and civil society in the monitoring process. In this way,** the strategic development framework of the National Statistical System (NSS) has been established and initiatives have been launched to facilitate the reporting process and effective communication of data using information technology and innovation, and to facilitate access to information, for the sake of the transparency of the decision making process.

83. It is relevant in the context of the data revolution, that Moldova has a **strategic framework for the development of statistics.** National Bureau of Statistics, established as the core of the centralized national statistical system, operating under a Law on Official Statistics[15] () is empowered to organize and manage all statistics activity in the country, along with other public institutions involved in the production of official statistical information. Alignment of the country's political prospects to European and international (UN) principles and values supported the development of official statistics and connected the NBS directly to the EUROSTAT and UNSTAT principles and practices. According to World Bank estimates, Statistics Development Index reached a score of 94.4 on the 0-100 scale which far exceeds the average for European and Central Asian region (77.7)[16].

84. Also, in the context of guiding national policy towards European values and principles, special attention is also paid to statistics in Chapter 6 of the Association Agreement between the EU and Moldova, which in Art. 41 states that "The Parties shall develop and strengthen cooperation on statistical matters, thereby contributing to long-term objective of providing timely, internationally comparable and reliable statistical data.... " This chapter of the Agreement was considered as the main landmark in the development of the **Strategy for the Development of the National Statistical System 2016-2020[17]**, which addresses the challenges of reporting and monitoring the progress of the development sectors of Moldova on the basis of indicators and methodologies agreed upon at EUROSTAT and UNSTAT levels.

85. The data revolution process requests strengthening the statistical system, namely of the National Bureau of Statistics as the core of the data revolution to enhance its capacity to produce quality statistics, including depending on demand from data users. It is assumed that the implementation of the **NSS development strategy** actions will strengthen the position of statistics in Moldovan society, will significantly reduce the current NSS shortcomings and will also strengthen its essential components, operating principles of official statistics, will strengthen and develop partnerships between data producers and owners and will help increase the use of statistics in the decision making process.

86. The main outcomes targeted through the actions implementing the NSS Development Strategy from 2016-2020, presumes consistently supporting the SDG monitoring and reporting process by implementing methodologies for calculating the indicators, but also integrating innovations in data collection and their analysis in the context of monitoring the SDGs. The strategic objectives and proposed measures respond to SDG 17 targets "Partnerships for Development." and the structure is consistent with the Independent Expert

[14] Within each of the five workshops held during the project, participants were asked about the MDGs and very limited knowledge of MDGs was seen on their part.

[15] Law on official statistics no. 412-XV from 09.12. 2004, http://lex.justice.md/document_rom.php?id=791C6EB9:910A2BA2

[16] http://datatopics.worldbank.org/statisticalcapacity/CountryProfile.aspx

[17] The Strategy for the Development of the National Statistical System 2016-2020 was developed with support from UNDP and is currently awaiting for the approval.

Advisory Group[18] recommendations on strengthening national statistics and national statistical offices (A World That Counts[19]).

87. Strategy implementation will allow NBS and stakeholders involved in NSS (public authorities, owners of administrative data, producers of statistics and users) to improve the legal and procedural framework for producing statistics, enhancing the provision of qualified human resources and endowment of **ICT infrastructure**, in accordance with the needs for production, dissemination and use of statistical data and to allow interaction with other data community, and all of these, taken together, will contribute to a proper monitoring of the SDG implementation.

88. In Moldova there is no separate strategy on ICT infrastructure development. However, most national strategic documents include components on infrastructure and the use of ICT. The policy framework for ICT infrastructure matches the SDG 9 "Industry, innovation and infrastructure" and SDG 16 "Peace, Justice and strong institutions," but is also a crucial cross-cutting area, which provides technological support necessary to achieve Data Revolution.

89. National Development Strategy "Moldova 2020"[20] provides "... application of information technology in public services for businesses and citizens" and the Roadmap for improving the competitiveness of the Republic of Moldova[21] includes ICT infrastructure under component 6, "Information Society," section "Quality infrastructure", stressing that to the constraints and problems mentioned horizontally related to the regulatory framework, the quality of public services and human resources, shall be added the poor quality of information from country's core registers and obsolete technologies, as well as insufficient consultation and information services. Also, the Vision of the "Digital Moldova Strategy 2020" is to **form an advanced information society** in using the tools provided by ICT, having greater access to modern ICT infrastructure, digital content and performance information rich services that will lead to economic competitiveness, good governance and therefore an increase in welfare.

90. Similarly, the Government is considering **consolidating departmental data centres and developing the Joint Governmental Technological Platform** (MCloud) in accordance with international standards[22], and a great deal of importance is given to opening the process of statistical reporting, which needs improvement in terms electronic data elements.

91. The strategic programme regarding the technological modernization of the Governance (E-Transformation)[23], sets out the objectives of **e-transformation process** and provides a unified vision for modernizing and improving the efficiency of public services through **ICT governance**. At the same time, this strategic programme creates a systemic approach on intelligent ICT investments and enhances the capacity of public sector ICT.

92. The Republic of Moldova has approved important documents ensuring **interoperability** in both the public and private sectors: *The programme on Interoperability Framework*[24], *MCloud Platform*[25] includes the following components: i) MPass[26] (government service on authentication and access to electronic public services), ii) MSign[27] (an electronic service that allows for the application and verification of digital signatures and the exchange of digitally signed documents), iii) MPay[28] (government service for electronic payments), iv)

[18] http://www.undatarevolution.org/, In August 2014 UN Secretary-General Ban Ki-moon asked an Independent Expert Advisory Group to make concrete recommendations on bringing about a data revolution in sustainable development
[19] http://www.undatarevolution.org/wp-content/uploads/2014/12/A-World-That-Counts2.pdf
[20] http://lex.justice.md/index.php?action=view&view=doc&id=345635
[21] The roadmap for improving the competitiveness of the Republic of Moldova, GD no.4 of 01/14/2014
[22] Program and Government 2016-2018, Point M. "Information Society, ICT"
[23] Government Decision no. 710 of September 2011 http://lex.justice.md/index.php?action=view&view=doc&id=340301
[24] http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=344700
[25] http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=351760
[26] http://lex.justice.md/md/351035/
[27] http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=353239
[28] http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=343404

MConnect[29] (government service which aims to exchange information and data between public authorities), v) PGRAP[30] (government platform for registries and permissive documents).

93. For a high level of **security** in the flow of data and information at the national level, in Moldova have been developed and are functioning both national public key infrastructure, as well as electronic authentication methods and mobile digital signature.

94. It should be noted however, that despite progress[31], the issue of **data openness** and interoperability has not been fully resolved.. Central public administration authorities hold more than 80 departmental information systems that use banks and sectoral databases, classifiers, registries and standards developed over the years. To ensure interoperability, in many cases it business processes within the various entities at the central and local levels should be re-engineered, a process that requires financial, human and institutional resources. Another r factor to be taken into account is the resistance to change.

95. Open Data Portal www.date.gov.md published from 2011 until now 881 data sets belonging to 48 central public authorities. However, it is still a big challenge to use this data in decision making, and in this sense one of the biggest issues is **data quality**, which concerns not only the **accuracy**, but also the **availability** (improperly formatted, lack of metadata and methodological notes, lack of source), **completeness, relevance and actuality**.

96. The desk review has found another significant factor, which is the **gap between central and local authorities** on the implementation and effective use of ICT infrastructure, with all of its aforementioned components. In terms of ICT infrastructure, there is a need to boost the process of computerization of the rural sector and to create an efficient mechanism for managing financial resources earmarked for nationwide informatisation.

97. As part of the open data initiative, has been passed the Law on the reuse of public sector information in accordance with EU PSI Directive. Moldova joined the Open Government Partnership (OGP) in 2012, to complement the government e-transformation agenda on specific issues such as **transparency**, access to public sector information, **responsibility, commitment of citizens, fight against corruption** and delivery of high quality public services. Have been opened more data on public expenditure, health, economy, cadastre and income declarations of public officials, in response to the growing demand from citizens.

98. The government has achieved significant progress in providing **electronic public services** to citizens and the private sector, such as e-licensing, e-reporting, mobile signature and online payment for public services. The civil service reform was launched and the number of electronic services is continuously growing on the public services portal www.servicii.gov.md. Delivery of electronic services and their takeover by the beneficiaries contributes to combating corruption in the public sector, and reducing the costs associated with the traditional delivery of public services.

99. Public institutions are **more actively engaged with citizens** by means of social media, via www.particip.gov.md portal, to collaborate with the public opinion as an important component of openness between public institutions and civil society in the implementation of SDG commitments.

100. The overall conclusion on the **transparency of information** highlights the existence of a functional and updated legal framework, as well as best practices in the implementation of information solutions that help support with statistics the decisions in the fields of rights and freedoms and good governance. The availability of these data enables stakeholders, civil

[29] http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=353238
[30] http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=354598
[31] According to the Barometer "Uptake of products launched under e-Transformation Agenda" of 31.01.2016[31], the service "mobile digital signature" launched on 14.09.2012 has registered 57,720 users and 1,051,918 transactions completed.
http://egov.md/ro/resources/infographics/asimilarea-produselor-lansate-cadrul-agendei-de-e-transformare-situatia-la-19

society, private sector and academia to further engage in supporting data revolution for developing public policies.

3.2. Commitment and leadership on data

101. Data community as a whole can be divided into three distinct categories: data producers, data holders and those who use the data. The powers and commitment to data of each community data participant, including visions and requirements, are defined according to these categories. However, some entities with responsibilities in the area of data may be found simultaneously in more categories, which increases their role in the national data ecosystem.

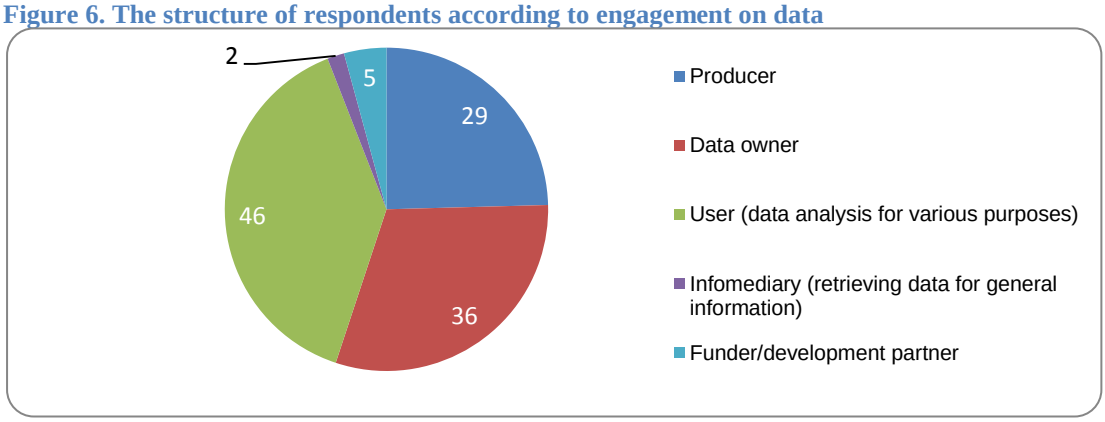
102. **Data Producers** represent the organizations / institutions which carry out the collection of data from respondents, processing, validation and transformation thereof in subsequent statistical indicators disseminated to the users through various methods and visualization tools. This category includes National Bureau of Statistics, National Bank, MH, MIA, etc. and other data producers. Unlike producers, data holders do not collect data from the perspective of producing indicators, but proceeding from the duties of their activity, which amount to tracking the beneficiaries of services provided. In turn some data holders transmit their data to the producers of official statistics to produce statistical indicators. For example, the data related to foreign trade is developed by NBS based on customs declarations submitted by the Customs Service.

103. **Data users** are heterogeneous by their nature and can be grouped into the following categories: i) public administration using data for developing the strategic framework, monitoring and evaluation; ii) private sector - market research; iii) academia - scientific research; iv) mass media - informing the general public; v) general public - for personal use. There is another category of stakeholders involved in data community – **infomediaries,** thatare actually data users who take or use statistical data for developing different analytical reports, case studies, at the request of the beneficiaries.

104. According to the study on data revolution, only 25% (29) of respondents who took the survey identify themselves as data producers and 31% (36) - as data holders (Figure 6). Such a situation reinforces the fact that **not all data producers are part of the official statistical system** that includes the central statistical office and other producers of official statistics. This is because currently under the Law on official statistics there are no clear procedures for awarding the status of producer of official statistics to other agencies and authorities involved in data production.

105. On the other hand, the predominance of data holders indicates that there is a great potential of data in the possession of institutions / organizations which are not **fully exploited and transformed into statistical data** to be made available to the public, the media, decision makers, etc., including monitoring and reporting the SDGs.

Figure 6. The structure of respondents according to engagement on data



Source: CIVICUS MDC and IDSI Research, 2016

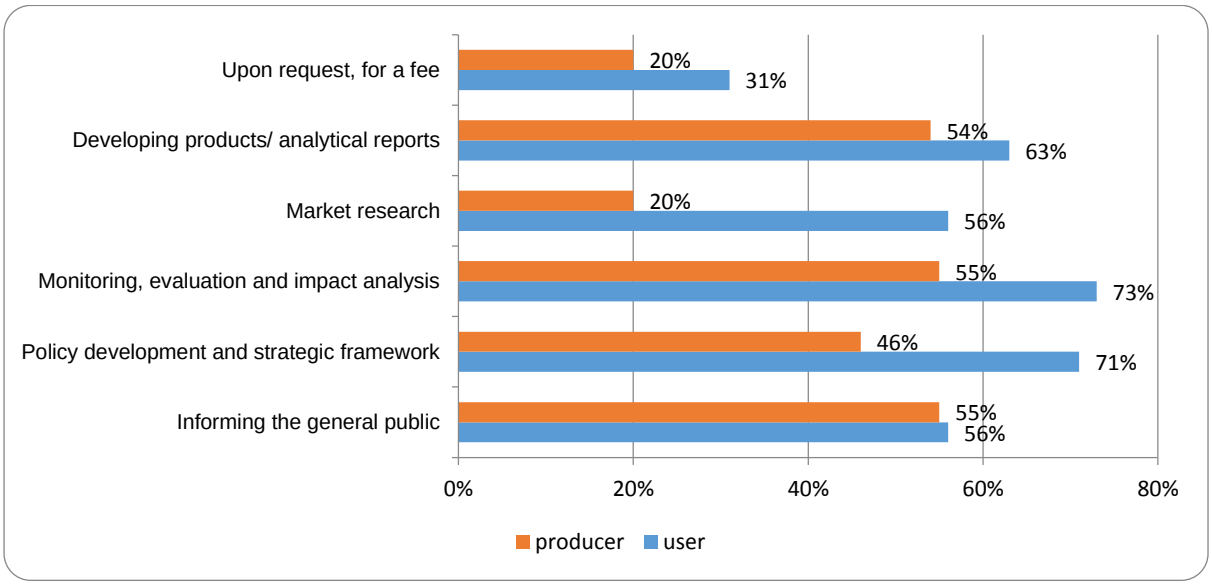
106. Of all the respondents to the survey the majority (98%) **prefer using, for purposes of their activity, official data from public authorities**, which are valued at an acceptable quality level (good and very good) by 92% of respondents. Relatively fewer (74%) resorting to also unofficial data sources (case studies, independent research, expert opinion, etc.) and to data from external sources[32] (70%), which are assessed at a lower level of quality as compared to the official ones.

107. Such a situation reveals **on the one hand a greater level of confidence in official data, while on the other hand it highlights the reluctance of respondents use data from independent sources**, obtained through qualitative methods. In the case of external sources, most likely the volume of data available and the frequency of updating international data as compared with national data are factors that determine the usability of the data from these sources.

108. CPA, to a greater extent resorts to official sources of data, versus LPA, for which unofficial sources are an important informational support for the vast majority of respondents to the questionnaire. This situation could be explained by the fact that **many data at the administrative territorial unit level are not available from official sources** and so they resort to informal sources to fill the gap of data and statistical information. These limitations must be considered in the process of localization of SDGs, but also at the stage of identifying alternative sources and methods of obtaining data.

109. The production and use of data by data community stakeholders is intended largely for monitoring, evaluation and analysis, policy development and strategic framework, but also for purposes of developing independent analytical reports. Although the data is a public good, it should be noted that **informing the general public with data is not among the main priorities** of data producers and users, and indirectly this contributes to generating constraints in accessing data by citizens and mass media (Figure 7).

Figure 7. The purpose of the production and use of data



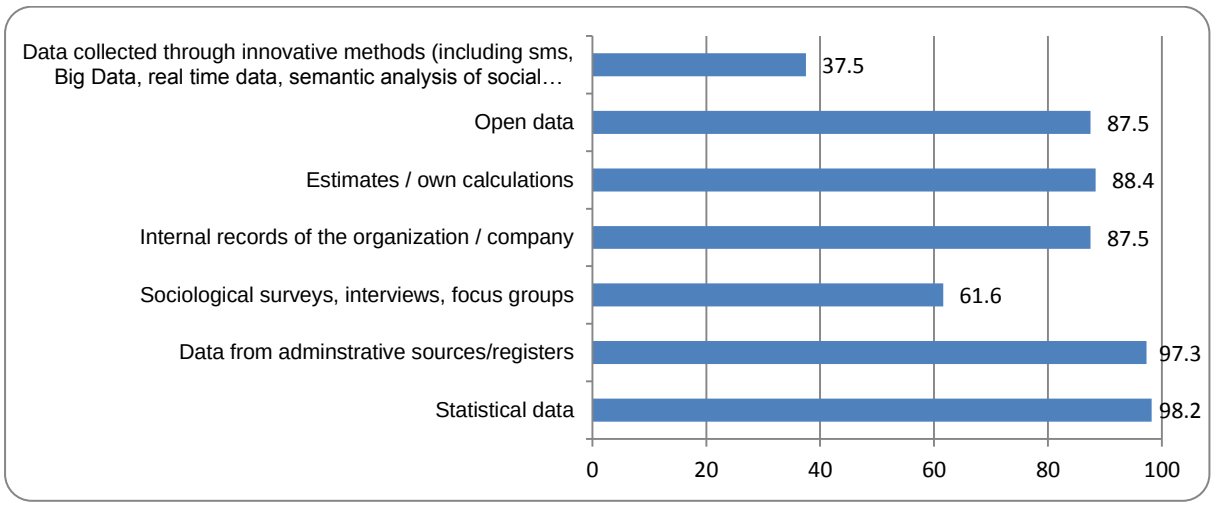
Source: CIVICUS MDC and IDSI Research, 2016

110. In terms of involvement in the promotion and production and / or the use of data in the activity of the organization / institution, the **least used data types are those through innovative methods** (Big Data, including SMS, real time data, semantic analysis of social media, etc.) and those based on direct interviews (sociological surveys, interviews, focus groups), mainly being used statistical data (98%) or data from administrative sources (97%). However, we notice a **significant progress in the use of open data**, thus 88% of

[32] World Bank, World Health Organization, International Monetary Fund, etc.

organizations / institutions indicated these data as one of the sources they use for their business purposes (Figure 8).

Figure 8. Types of data used in the work of organization / institution



Source: CIVICUS MDC and IDSI Research, 2016

111. The use of data obtained by traditional collection methods reveals a certain routine and conservatism in the decision-making process, but also a higher level of confidence in data obtained by these methods. This fact is also confirmed by the conclusions of the workshops where participants reiterated that **data producers are not ready to collect and produce data based on alternative sources of data and the decision-makers in their turn are not prepared to pull data and develop decisions relying on alternative data sources**. Simultaneously, data producers rely more on their own data and records, especially true for official statistics producers, while users most frequently resort to sources, such as open data, and other data obtained by mean of own estimates and calculations. Thus, the process of **data opening and extension of access to data on various online platforms**, including NBS Statbank enables users to perform certain calculations independently of the primary source of this data.

112. Therefore, the involvement by interested parties in data revolution, in the context of improving data accessibility, entails commitments in the future not only in respect to producing data, but also concerning assuming certain **commitments to promote and use interactive tools for accessing and visualizing data**. Currently, leaders of organizations / institutions promote the use of maps, including animated ones (60%), infographics (72%), to a lesser extent, which derives from the limited capacity of producers and data users to create them.. However, more often they resort to the use of online databases to access the data of interest (95%).

113. Insufficient IT capacity, insufficiency of qualified human resources, limited knowledge in using modern tools of analysis, a reduced appetite for innovation and change, etc. are the root causes that determine the degree of openness and acceptance by data producers and users of innovative methods in all the processes concerning data.

114. At the national level, we can conclude that there is an increased interest in data from all the data ecosystem stakeholders, but it's the synergy between data supply and demand that is important to ensure, along with the data needs to be translated into decision-making actions and vice-versa, while **the data producers and users should be aware of the need to diversify data sources**.

115. In this context, institutions which have the role of coordinator and leader play an important role. On the data production segment, this role obviously rests with the National Bureau of Statistics, as confirmed by survey respondents. The leadership attributed to CPA, and immediately to the State Chancellery, on the pathway of analysis and monitoring of policies and strategies is undisputed. However, in terms of promoting modern technologies for the

collection, production and exchange of data, according to respondents' opinion, the leadership is owned by MITC and e-Government Centre, which are really perceived as leading institutions in promoting new technologies for data analysis and visualization. In fact, NBS, MITC and e-Government Centre are the institutions most frequently listed as a leader on data production and promotion of modern data technologies. So, in the context of the data revolution these institutions are going to establish lasting partnerships in order to ensure a proper functionality of the data ecosystem elements.

3.3. The regulatory / legal framework

116. Nationally, there are regulatory and coordination mechanisms for the key elements of data ecosystem, such as statistics activity, access and data exchange, but also for the monitoring and evaluating of evidence-based policies. Meanwhile, organizations and institutions that are part of the data ecosystem operate according to an activity specific mandate, which is assigned by laws, government decisions and internal regulations.

117. The regulatory framework which refers to **the process of collecting and producing data** includes laws, government decisions, regulations on the activity of official statistical bodies (central statistical body and other producers of official statistics), and the activity of each data community participant. So, the Law on Official Statistics[33] grants the National Bureau of Statistics and other official statistical bodies the mandate for the collection of statistical and administrative data for statistical purposes from all legal entities and individuals. Other producers of official statistics have their own additional regulatory documents that specify the right of the authority to collect and produce statistical indicators. One good example is the National Bank of Moldova, which collects primary statistical data necessary to achieve its objectives and complete its mandate under the Law on the NBM[34].

118. In the case of data holders who are not part of official statistics, data collection mandate is reflected in the regulatory framework directly governing the reference institution activity. For instance, the Tax Code provides the State Tax Service the right to collect information relating to taxes and fees[35]. Legislation on the public social insurance system[36], gives the National Social Insurance House the right to collect information relating to the payment of social security contributions, etc. There are situations of regulating the collection of data by the authorities directly responsible for the development of sectoral policies. Thus, the Ministry of Economy under the Regulation on the organization and functioning of the ministry[37] collects data on different areas of interest, such as data on social and economic indicators to calculate the index of deprivation of small areas. The Regulation of the Ministry of Regional Development and Construction also states as one of the core functions "creating and managing information systems and databases in the field of competences."[38].

119. The knowledge of existing national framework with respect to the collection, exchange and use of data of the stakeholders involved in this process vary depending on the aspects governing such areas. Given that some of the data of public interest may be owned and managed by certain organizations / institutions which are not part of the National Statistical s System and eventually they have no specific responsibilities for data collection, it is of interest to what extent they are supported by regulatory acts. The study on data revolution showed that data collection and production phases are regulated for 82% of respondents (see Figure 11). At the same time, every second respondent who holds a mandate

[33] Law no. 412 of 09.12.2004http://lex.justice.md/document_rom.php?id=791C6EB9:910A2BA2
[34] Law no. 548-XIII of 21.07.1995 https://www.bnm.md/ro/content/lege-cu-privire-la-banca-nationala-moldovei-nr-548-xiii-din-21071995
[35] CODE no. 1163 of 24.04.1997 http://lex.justice.md/md/326971/
[36] Law no. 489 of 08.07.1999
[37] Government Decision no. 690 of 13.11.2009 http://lex.justice.md/md/332739/
[38] http://www.mdrc.gov.md/tabview.php?l=ro&idc=124&t=/Minister/Atributiile-ministerului

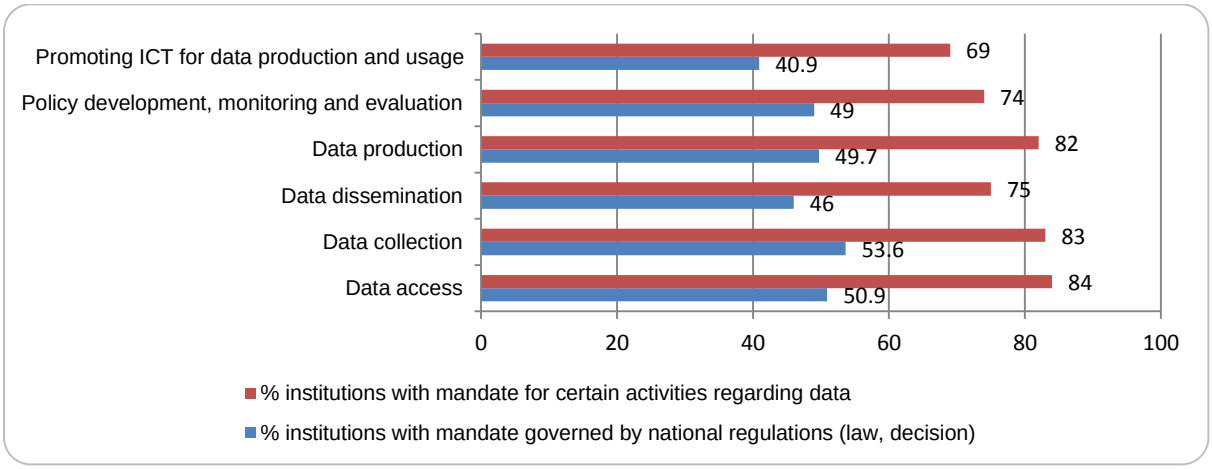
for data collection and / or production, noted that these activities are regulated by laws and government decisions, while for the others data is collected and / or produced under an internal order or regulation. This fact, in the context of identifying all data community stakeholders, limits the identification of potential producers / owners of data nationally and their subsequent involvement in the process of nationalization and reporting of SDGs.

120. The general normative framework on access to official information is regulated by the Law on Access to Information[39], and specifically the **framework on data access refers** to the Law on official statistics, but also to other acts that stipulate how to access data. Harnessing the economic potential of government data is regulated by the Law on the reuse of public sector information[40], which creates the framework for the access and re-use of public data and information. When referring to **data protection**, which is an important prerequisite in ensuring access to data, it should be noted that the Law on Protection of personal data[41] regulates citizens' personal data protection for institutions processing such data. Simultaneously, the Law on official statistics provides for protection of individual data for all categories of respondents (individuals and businesses).

121. The survey data reveals a very high level of information among data community stakeholders with reference to the legal framework on access to data (90% of respondents), and of the acts governing data protection (86%). This derives from the fact that the provisions on access and data protection directly or indirectly stipulate certain regulations for the entire circle of stakeholders, be that producers or users of data, or the real estate sector providing certain services to the population, the media or other infomediaries.

122. In the context of ensuring the quality of primary data, underpinning the calculation of statistical indicators, it is important to have regulations at the national or institution / organization level with respect to each process concerning the data. Based on the study we can conclude that 84 percent of respondents have a data access mandate; about 80 percent have a mandate to collect and process data. Somewhat less covered with regulatory documents are the stages of dissemination and analysis of data and the promotion of ICT in the cycle of production and use of statistical indicators (see Figure 9).

Figure 9. Percentage of institutions / organizations that have mandates for certain elements of the ecosystem



Source: CIVICUS MDC and IDSI Research, 2016

123. The situation is different when referring to national mechanisms regulating specific activities for certain categories of producers or users. Thus, the regulatory framework for the

[39]Law no. 982 of 11.05.2000, http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=311759
[40]Law no. 305 of 26.12.2012, http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=347200
[41]Law no. 133 of 08.07.2011, http://lex.justice.md/md/340495/

development, monitoring and evaluation of policies is known by two-thirds of the respondents, usually the CPA representatives who are directly involved in this process. The same trends can be noted in the case of national mechanisms for the coordination of statistical norms and standards, which mainly central government bodies have knowledge of, proceeding from their involvement in the production of statistical indicators, while the real sector, civil society and infomediaries are less familiar with them.

124. In order to strengthen the policy analysis, monitoring and evaluation framework, within the CPA subdivisions/departments with competencies in these areas were established starting from 2007[42]. These divisions (PAMED) play an important role in the data ecosystem, being directly responsible for transposing data and records into policies and strategies to improve the lives of every citizen. The framework regulation of the unit for policy analysis, monitoring and evaluation of the CPA provides direct responsibility for the "management of databases necessary for policy monitoring and evaluation" and "monitoring and evaluating the implementation and impact of sectoral and cross-sectoral policies," these being indispensable elements to data ecosystem.

125. While there is a legal framework regarding the production and use of data, and most organizations and institutions have knowledge of it, still, in the view of data producers and users, it has certain limitations. About 60% of respondents consider the **existing legal framework as incomplete** with respect to the production and use of data and 40% have invoked **certain contradictory provisions** or lack of a legal framework. Of provisions considered to be contradictory,, on the one hand, the provisions on data protection and privacy should be mentioned and on the other hand, those regarding the access of public administration bodies to data sources of other holders classified as confidential. Discrepancies between different sets of legislation have been mentioned as one of the basic barriers, including by the participants in the workshops, particularly with regard to the collection and management of data.

126. . Another challenge for the data community, identified in the workshops, is the **insufficiency of mechanisms to implement the legislation**. Although the law stipulates the NBS role as coordinator of the process of producing official statistics, currently there are only a few interaction mechanisms[43] between different authorities in respect of data exchange between administrative data producers and NBS. However, these mechanisms do not provide for compliance with certain principles and quality standards with reference to the primary source of data and statistical indicators generated based on these sources, thus making it difficult to assess the relevance and consistency of these statistics in the light of their subsequent use for the production of additional indicators.

127. In the opinion of participants in the workshops, **some limitations of the data regulatory framework can be resolved or mitigated** by: i) strengthening the coordination role of NBS within the national statistical system; ii) creating interaction mechanisms (e.g. by Government Decision, at the NBS proposal, on rules and standards for all producers of administrative data) between various authorities, for data production and dissemination, and iii) standardization of coding procedures, unification of nomenclatures and classifiers used, and accountability of institutions / stakeholders on their use.

128. Along the same lines, , **adjustments are needed to the legal framework** for the proper functioning of the national statistical system and data access, by way of: i) reviewing the law on official statistics in the context of extending the provisions on access to administrative data sources and implementation of quality management in official statistics, ii) developing a mechanism for awarding the status of producer of official statistics to other

42 Decision no. 710 of 23.06.2006 on the unit of analysis, monitoring and evaluation of policies within the central bodies of public administration, http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=316394

43 Bilateral agreement on information exchange

authorities responsible for producing statistical indicators, iii) defining the coverage areas of official statistics under statistics sector development Programmes by diversifying and expanding primarily in the areas falling under strategic development objectives of the country in the "Moldova 2020" and sectoral strategies (health, education, agriculture, environment, energy, justice, etc.) to be linked to sustainable development agenda 2030.

129. Therefore, the current legal and regulatory framework regarding data must entail in the near future some **review and clarification actions through a collaborative and advisory process** so that the tasks and responsibilities with regard to data management (collection, production, dissemination, exchange, analysis and use) will be coherently shared to all the relevant stakeholders to be involved in the data revolution and in implementing and monitoring SDGs.

3.4. Data Policies

130. In the context of data revolution, it is not enough to just have a considerable volume of data that can be easily accessed by users, but it is very important that the **data is relevant, available at the right time and of acceptable accuracy**, prerequisites for effective decision-making at every level. Data quality must be ensured by following the procedures and standards for its production.

131. The Code of Best Practice of European Statistics states that the available statistics must meet the needs of the users, be developed in accordance with European quality standards and serve the needs of European institutions, governments, research institutions, business concerns and the general public. Important issues concern the extent to which statistics are relevant, accurate and reliable, timely, coherent, comparable across regions and countries, and readily accessible by users.

132. To implement these provisions from the Code of Best Practice, NBS undertakes certain activities in the data policy field on implementing these provisions by transposing the fundamental principles of official statistics: relevance, timeliness and punctuality, coherence and comparability, accessibility and clarity. With reference to data production it should be mentioned that one of the priorities is **to implement national classifiers based on international ones**, which are intended to produce relevant and internationally comparable statistical data. With the signing of the RM-EU Association Agreement, data production is also focused on implementing EU Regulations on statistics. Currently about two-thirds of the national statistical surveys are based on EU regulations, which allows the production of reliable and relevant statistics in certain statistical areas.

Box 2. The interactive Data Base (IDB) of the National Bank of Moldova (NBM)

The interactive Data Base (IDB) of the National Bank of Moldova (NBM) was developed in response to the need to provide support in taking monetary policy decisions; to inform the public regarding the indicators which fall under the responsibility of NBM (in accordance with the Law regarding the NBM, Law regarding the official statistics); to respect the commitments undertaken before foreign partners (IMF, World Bank etc.); to provide qualitative statistical data to the academia (for research), modelling forecasts. The data base was launched on the NBM webpage[44] on June 4, 2015. The data included in the data base come from the periodical reports of the banks and of other surveillance entities (exchange offices, providers of payment services); data from other authorities, including based on the bilateral cooperation agreements (ex. NBS, NCFM-National Commission for Financial Market) and information which are generated at the level of NBM during the regular business.

The IDB includes the following types of reports: monetary statistics; interest rates, monetary aggregates, newly attracted deposits, newly issued loans; statistics of the

[44] http://bnm.md/bdi/

financial sector; profitability; liquidity, solvency, structure of the loans/deposits portfolio; statistics of international accounts; balance of payments, international investment position, external debt; other statistics (payment system, securities market, foreign exchange market).
The quality of data shall be ensured by establishing single reporting requirements (classifications, definitions); by utilizing primary of advanced procedures for validating the received data; complying with the international methodological requirements in the field of production of statistical data; guidance for the Code of Practice of European Statistics, including reusing data; disclosing the singularity of producing certain data.

133. The process of users' consultation, particularly of central public authorities is currently carried out through the statistical work Programme[45] approved by Government on annual basis. The Programme contains statistical works / products, the profile of data compilation or disaggregation, periodicity of information compilation, the deadline for submission to the beneficiaries, etc. Under this Programme, timetable for issuing statistics is developed, where information on the date and month of placing statistics in press releases is available.

134. NBS dissemination policy has focused in recent years on **expanding access to data** not only in terms of data **volume**, but also of **areas and the level of disaggregation** of statistical indicators. The information is placed in a reusable format using different modern tools for data visualization, such as the statistics data bank (allows the export of data in XLS, CSV, TXT, XML, DBF, etc. formats), interactive products of data dissemination, the price index calculator, maps and animated graphics.

135. NBS and other producers of official statistics, such as NBM, MH, MIA, MITC participate in international information exchange through filling in international questionnaires. At the same time, Moldova is subscribed to the Special Data Dissemination Standard (SDDS), which provides for the country's commitment as a Member State requesting access to international capital markets to submit certain economic and financial data referring to four sectors: real estate, public finances, financial and banking, foreign sector.

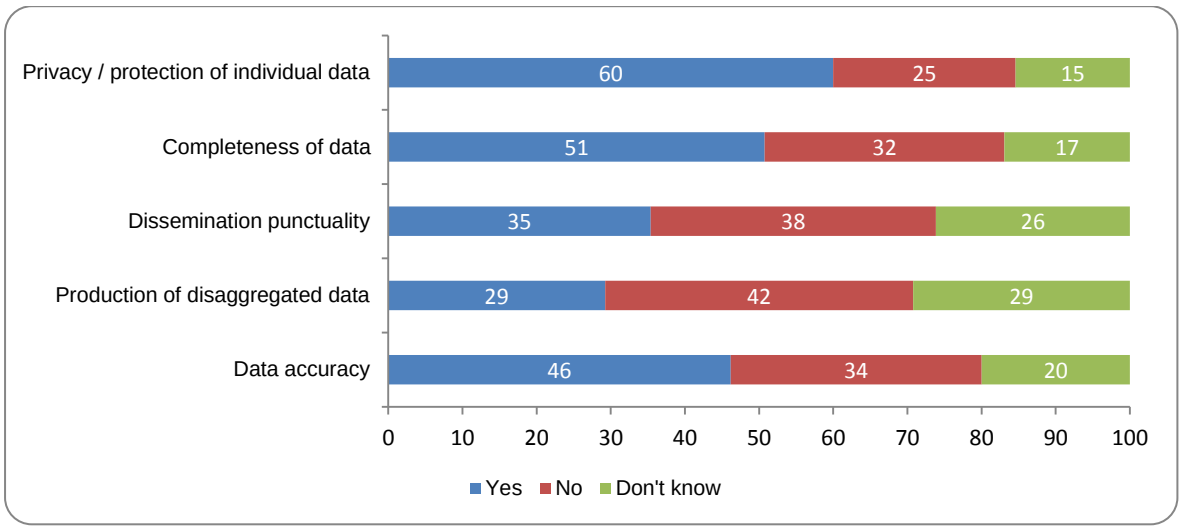
136. An important component of the dissemination policy are metadata for end users[46], where it contains certain information (definitions and variables used, calculation formulas, description of research, data collection and processing, dissemination, non-response rate, sampling error, etc.) for each statistical survey. Some statistical products in the field of business, income and expenditures of population, employment statistics are accompanied with reference to non-response rate, coverage circle, margin of error, the coefficients of variation, etc., thus users can get informed on quality of statistical data disseminated. In order to determine the needs of users, but also the level of satisfaction and credibility of different categories of users towards statistical data, NBS, with the support of development partners, has conducted two public opinion polls[47].

137. When referring to the overall situation on data producers, we find that in the process of data mining users often face a lack of information on the manner and conditions for collecting and disseminating data. The results of the study of the data community show that every second largest producer of data lacks metadata referring to data content, conditions and criteria for their collection and especially the possible ways to disseminating data and the period of availability of them to the general public. This creates a **rift between producers and consumers of information**, which involves **difficulties in accessing, perception, interpretation and analysis of information, and possibly delayed reactions to certain phenomena**. Metadata implementation is a process that must be supported by technology, people and processes, but their importance to ensuring transparency in the data management is unquestionable.

[45] http://www.statistica.md/ pageview.php?l=ro&idc=152&
[46] http://www.statistica.md/pageview.php?l=ro&idc=430&
[47] http://www.statistica.md/newsview.php?l=ro&id=2751&idc=30

138. When referring to data policy for certain elements of the quality concept, we observe that only 50 percent of data producers / holders have regulations or internal guidelines on accuracy and completeness, so we can assume that in terms of data collection phase, **not all the procedures are standardized**, and the users are unable to learn about the level of data complexity and quality (Figure 10). About 60 percent of **producers lack certain procedures to regulate the punctuality of data dissemination**, which means there are no timetables for the dissemination of data and **users are limited in the timely use thereof, even if the volume of data is sufficient and of acceptable quality**.

Figure 10. The share of data producers who have regulations and / or internal guidelines on certain data aspects



Source: CIVICUS MDC and IDSI Research, 2016

139. In terms of **data privacy / protection of personal data**, producers and holders of data pay greater attention, most likely due to current regulations in Moldova. Only 40 percent of producers said they do not have internal data privacy acts and thus the risk of unauthorized access to the primary data of private or individual nature could arise. All these discrepancies in the statistical production cycle may have certain consequences on making wrong, ineffective and delayed decisions by the competent bodies. In the case of NBS, the conditions to ensure data privacy are stipulated in the Law on official statistics, and in specific cases, such as population census or other studies at the population level, commitment to data privacy is stipulated by normative acts (Census) or by regulations / internal guidelines on specific statistical research.

140. Since SDGs set targets geared towards different vulnerable population groups, thus their monitoring could be a challenge for producers and holders of statistical data, taking into account the need to report a number of indicators disaggregated by certain criteria. Currently, only 3 in 10 producers have the production of data disaggregated according to certain characteristics in the provisions of internal regulations (Figure 12). Consequently, **the localization of SDGs must be followed by an operational plan on improving the availability of disaggregated data**.

141. The lack of policy and regulatory framework in each data producer / holder determines certain obstacles in obtaining data. About 83% of respondents mentioned the lack of certain necessary data and statistical information, 78% invoked the lack of data disaggregated by certain criteria, while the period of data availability and data production frequency is seen as an impediment by every second respondent.

142. Therefore, a strong need is felt from users to have **more complex information with a more detailed disaggregation**, produced in a shorter time period and with greater frequency. This can be achieved by creating a **regulatory framework of different phases of the cycle**

of data production, including for the organizations / institutions which are not part of official statistics, **engaging more producers and holders of data** in the official statistical system, **greater use of administrative data sources** to produce statistical data, **the use of alternative and innovative data sources** from potential data holders, including holders in the private sector.

Box 3. The MiLab Center for Social Innovation

The MiLab Center for Social Innovation (implemented by UNDP Moldova and the Center for e-Governance[48]) is a **multilateral platform** which engages several actors from different sectors (public, private, non-profit) in experimenting different innovative approaches in order to solve the social problems, solutions tested on site and "co-developed" with the active involvement of the beneficiaries and which are ready of being applied on a larger scale. MiLab concludes successful partnerships for different initiatives with governmental institutions, embassies, providers of communal services, mobile telecommunications operators etc. This means overcoming hierarchies, stimulating a closer cooperation between the sectors and encouraging trust. The activity of MiLab is structured around three interconnected components: redesigning the public services by focusing on the person; innovative governance approaches and integration of social innovation. As a result of the partnerships, the Government obtains valuable data and information from the civil society regarding certain services, needs etc. which it uses in the decision-making process. Thus the decisions are substantiated by realities and evidence.

MiLab Projects:

- **Mapping the inhabitants from rural communities** by using the data from the suppliers of electricity. The data are useful in order to map/locate the inhabitants from certain areas, with useful periodicity. Scope: to supply data to the local and central public public authorities in order to take efficient decisions in the field of infrastructure (e.g., decisions regarding investments).
- **Evaluation of the public services by the citizens** by obtaining data with useful periodicity/in real time about the quality of public services provision. Scope: to evaluate the performance of territorial offices. The pilot projects shall be implemented in the territorial offices of National Social Insurance House.
- **Mapping the current (private and public) legal parking places** by collecting (from the public authorities, police, private companies or even the citizens) and processing the data regarding the areas with traffic jams (e.g., hospitals, public authorities etc.). Scope: to publish the map containing parking lots with data regarding the availability of the parking places in real time.

143. Under the conditions of laying considerable efforts to improving the quality of official statistical data, NBS currently has no separate policies related to data, data quality and statistical outputs. In this context, it should be mentioned that at the international level several tools have been developed to modernize the statistical system and, respectively, to improve the quality of statistical data in question. Of these standards, there are the following: t: i) GSBPM – Generic Statistical Business Process Model, which describes and standardizes all the statistical processes from production to the dissemination of data, ii) GSIM – Generic Statistical Information Model, a reference framework that describes the information objects in all the statistical production processes, iii) SDMX – Statistical Data and Metadata eXchange, a standard for data exchange between different producers of official statistics, international institutions, other data holders, etc.

144. One of the major objectives of the National Strategy for Development of the National Statistical System is developing and implementing a quality policy at the level of NBS, and

[48] Centrul de inovații sociale MiLab, http://inovatii.gov.md/milab

with strengthening the leading role of the national statistical system, the promotion of quality management of official statistics for other producers of official statistics will follow.

3.5. Human resources and institutional capacity

145. As the reports on the implementation of the MDGs in the Republic of Moldova[49] show, no activity was noticed by certain data communities or entities/organizations outside the central government which could support data collection, processing and reporting through their own means in accordance with the requirements of indicators. Reports also note a reduced national monitoring and evaluation capacity and a lack of capacity to analyse and interpret indicators for policymaking.

146. The Draft Strategy for Development of the National Statistical System (NSS) identifies the need for a solid body of professionals attracted and maintained in the NSS who have a variety of specializations in: statistics, economics, mathematics, sociology, information technology, public administration and management, and not lastly, who speak foreign languages (especially English). In addition, the Strategy points out the **insufficient personnel in the field of statistics, especially in rural areas**: deficient human resource management, cumbersome human resource management processes.

147. The legislative dynamics, partnerships and projects (with the number of those under implementation going up) at the level of public authorities, of civil society, the need for monitoring and reporting, the production of data for substantiating the public policies, requires skilled and stable human resources in positions and duties. The respondents to questionnaires expressed a picture of the current situation with respect to human resources and institutional arrangements regarding the data revolution.

148. The participants to workshops mentioned that, although, generally, **human resources exist**, **they are not skilled enough** (with the exception of some resources from NBS) or they are insufficient to cope with the increasing tasks (lack of specialized personnel for data processing and analysing, for the process of populating problems with statistical data), especially at the CPA level.

149. The following factors are, mainly, the ones to cause this problem: **insufficient training; personnel turnover; poorly prepared**/narrowly specialized personnel (a problem that begins in the universities the curricula of which do not correspond to the actual requirements of the labour market) and, not least, the **low incentive** for the personnel (including the financial one).

150. As for the training of personnel within institutions of higher education, at the moment, **there are a few departments specialized in Statistics and/or Data Analysis**. The Academy of Economic Studies of Moldova (ASEM) has the Department of Cybernetics, Statistics and Economic Informatics, providing a bachelor degree for those specialized in Statistics and Economic. The same department provides degrees for students specialized in Cybernetics and Economic Informatics; Informatics; Information technology etc. The master degree is provided for students specialized in: Statistics and Actuarial Insurance, Economics and Business; Applied Statistics; Banks, Insurance, Trade, Telecommunications; Analyses and Financial Forecasts in Entrepreneurial Activity; Economic Policy Analysis, Monitoring and Evaluation. Analysts of economic data are prepared at this level. The State Agrarian University of Moldova personnel is prepared at the Department of Accounting, Department of Economics, Statistics and Analysis; and Mathematics and Informatics.

151. Unlike Statistics and/or Data Analysis related specialty, **the ICT related specialties are more popular**. As it was mentioned above, the specified higher education institutions

[49] See Chapter 1

have several departments and specialties in informatics, computers etc. In addition to that, the Technical University of Moldova has the Department of Computers, Informatics and Microelectronics, Department of Engineering and Management in Electronics and Telecommunications. The Free International University of Moldova (ULIM): Department of Information Technology and Computers ("Information Technology", "Computer Engineering", "Security Information", "Cybernetics and Informatics"). At Moldova State University (bachelor degree and master degree) - Department of Physics and Engineering (Information technology, Computers etc.)

152. An IDC Study[50] shows that a large labour market does not necessarily offer a large skilled labour force. One of the biggest challenges faced by the companies in the knowledge-based economies is to ensure an adequate number of employees with the skills needed for information-intensive positions. These include knowledge, technical skills, interpersonal skills, communication skills and management skills. According to the percentage of population engaged in ICT (classified by ISCO categories[51]), **the Republic of Moldova** (together with Slovenia) **ranks first among all countries of Central and Eastern Europe** (CEE) **with 2.8%**.

153. Of the 7 analysed CEE countries (Ukraine, Hungary, Romania etc.), **Republic of Moldova had the highest percentage of graduates in specialties like "Computers", "Mathematics and Statistics"** of the total number of graduates of tertiary education institutions in 2013, almost 6%. Despite the fact that, in absolute terms, the figure is lower than those of other countries, the percentage shows a growing interest among the population for a career in a field related to IT.

154. The rate of **school education in English** is growing in Moldova, and the level of proficiency in English among the population is improving considerably.

155. Of the total number of graduates in Moldova 6% are specialized **in mathematical sciences, statistics and computers**, including 2.4% which have studied mathematics and statistics, and another 13% of the total number - engineering. However, the number of **employable graduates of the IT departments is very low, while the demand on the labour market is much higher**.[52] The number of graduates of ICT specialties is quite high - around 2000 per year[53] (of the total amount of about 24.000 graduates annually), increasing every year, despite the massive migration phenomenon. This shows that the ICT sector in the Republic of Moldova grows rapidly. The number of graduates of ICT specialties in some countries in the Southeast Europe (for instance, Romania, Bulgaria, Slovenia and Croatia), decreased by 5-10% as of 2008. In recent years, the Government has increased the number of scholarships offered to the ICT specialties (from 618 to 762).[54]

156. Besides the training in higher education institutions, an important role is played by **the continuous improvement**. Most often, specialists benefit from **occasional courses** organized by development partners, but without any continuity and finality (testing, certification, tracking the usage of the knowledge acquired in applications to the work tasks and career advancement based on the results).

157. According to the questionnaires, **at the management level** of the organization/institution, 44% of the respondents have received training in data collection/production, more than half (54%) - in the calculation of statistical indicators, about 40% - in data analysis and presentation and in ICT, and 30% in policy development and

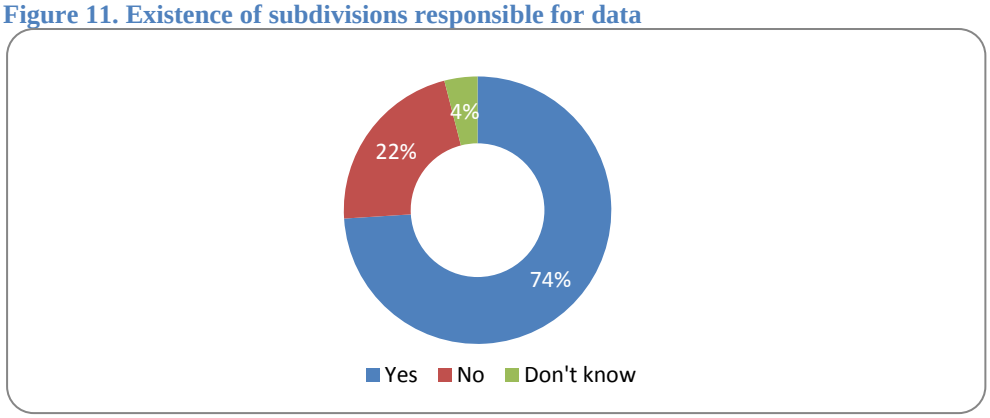
[50] Competitiveness Assessment of Moldovan IT Services Industry Prepared for USAID CEED II Moldova and Deutsche Gesellschaft für Internationale Zusammenarbeit (*GIZ*) GmbH, November 2014, IDC – International Data Corporation
[51] ISCO - International Standard Classification of Occupations
[52] http://agora.md/stiri/9067/moldova-%E2%80%93-o-tara-mica-si-cu-un-potential-imens-de-a-fi-un-exportator-important-de-tehnologii-si-servicii-it-la-nivel-global
[53] 2.233 ICT graduates in 2011, 2.039 – in 2010 and 1.642 – in 2009
[54] GD No. 254 of May 14 2015 - Strategy on improving competitiveness of the information technology industry for 2015-2021

monitoring. Most respondents indicated the occasional training once every few years (40% - data analysis and presentation; 37% - ICT), but here as well, only about 30% indicated training in defining and calculating statistical indicators and data collection/production.

158. As for the **training of employees**, the situation is similar. About 40% of respondents have received training in data collection/ production, 45% - in calculation of statistical indicators, about 38% - in data analysis and presentation and ICT and about 45% in policy development and monitoring. More respondents than those at the management level indicated occasional training once every few years (45% - data analysis and presentation; and the same level of training in ICT - 37%), about 38% indicated training in defining and calculating statistical indicators and data collection/production.

159. The effective functioning within the institutions of some **bureaus or organizational units dedicated to statistics or data processing** is good practice, which supports data revolution. According to the participants' answers, as shown in Figure 11, in about 74% of the public institutions there is a department responsible for data.

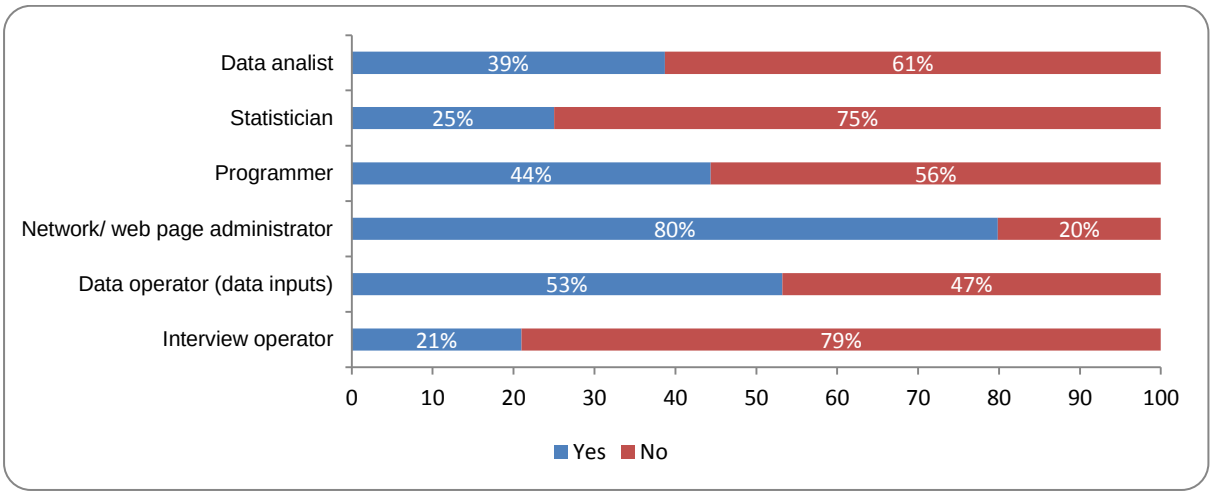
Figure 11. Existence of subdivisions responsible for data



Source: CIVICUS MDC and IDSI Research, 2016

160. Generally, they are confused with **ICT departments** (e-Transformation Services) and in most cases, they do not have statisticians or data analysts, instead, they have data operators and network administrators, but based on this, points of data exchange with users and partners of the data ecosystem, in the field specific for the institution, can be developed in the future (see Figure 12).

Figure 12. Structure of qualifications in data processing (number of respondents)

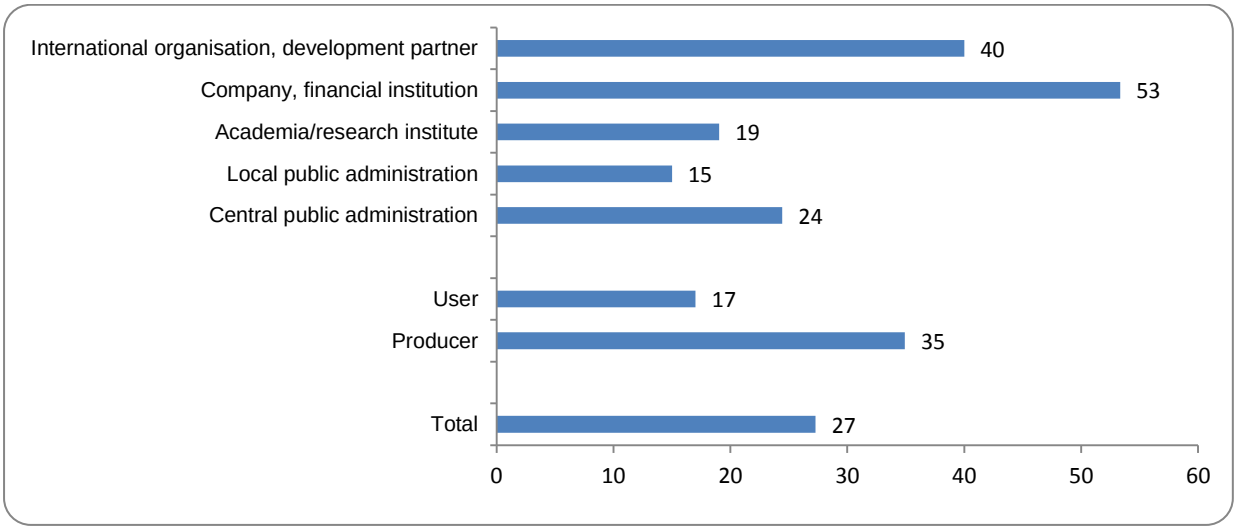


Source: CIVICUS MDC and IDSI Research, 2016

161. Categories of the existing functions or their absence in the institutions and organizations of the respondents to the questionnaires are shown in the figure below. Thus, 61% of respondents said their organizations do not have data analysts while only 39% said they do. The situation is slightly better for the network and/or web page administrators that are present in 80% of the institutions participating to the organized survey. Only 21% of respondents answered positively to the question concerning the interviewers

162. **ICT skills** are one of the basic factors that determine the usability and capitalizing degree of the existing data sources in the context of data production and use. The creation of competencies in this field implies the existence of some mechanisms concerning the continuous training of the personnel and periodic evaluation of their knowledge. Apparently, this process is not a sustainable one, as only 27% of the organizations/institutions have an internal mechanism for the evaluation of ICT knowledge. We mention that every third data manufacturer has certain assessment tools or procedures, while in the case of data users their existence was indicated by only 17%. When referring to the type of institution/organization, we conclude, based on Figure 13 information, that the real estate sector and development partners allocate more resources for improving the ICT skills of employees, while the Local Public Administration (LPA) and academia are situated at the other end of the spectrum.

Figure 13. Share of organizations / institutions that have tools and procedures for evaluating ICT knowledge



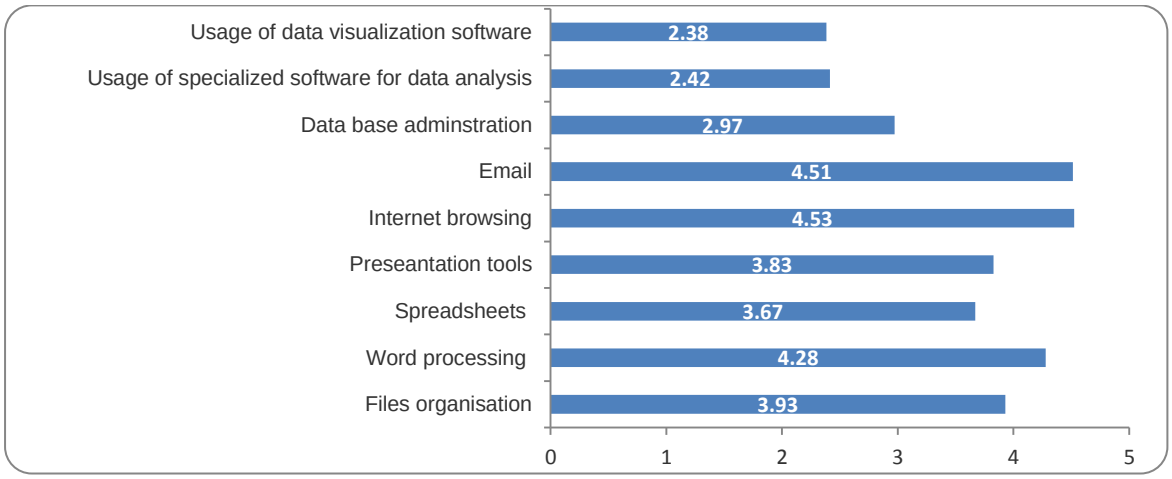
Source: CIVICUS MDC and IDSI Research, 2016

163. At the same time, qualifications and training programmes necessary for data production, analysis and presentation, defining and calculating statistical indicators, development in the ICT field or policy drawing up are generally secured only in the amount of 30%[55] of the actual needs. The reasons for the low number of training courses generally include **financial and budgetary limitations**, as well as a **low accessible offer** of this type of courses at the national level.

164. The existing ICT skills are limited to the use of applications for text processing, Internet browsing (the highest score - 4.53) and using e-mail, while the skills for operating databases or spreadsheet, for using specialized software for data analysis, such as MS Access or SPSS, are low and the level of knowledge is reduced (score - 2.42). The situation is relatively better concerning the skills for using certain data presentation tools such as MS PowerPoint (score - 3.83), however, very few employees are competent in the use of data visualization tools, for example, ArcGis (score - 2.38) (see Figure 14).

[55] Source: CIVICUS MDC and IDSI Research, 2016

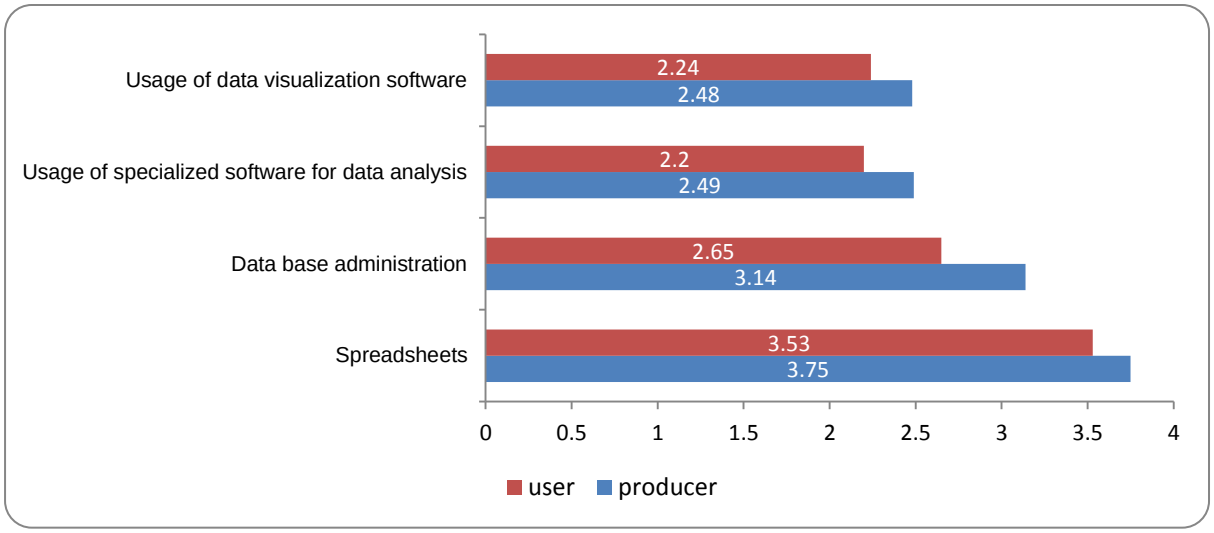
Figure 14. Average score of ICT skills



Source: CIVICUS MDC and IDSI Research, 2016

165. **Data producers have better skills** (as shown in Figure 15) concerning the performance of some spreadsheets and operation of databases, **compared to the users**, because of the specific process of producing statistical indicators. However, **both producers and users do not have sufficient ICT skills to produce and analyse statistical indicators** with the use of some specialized software for data analysis. On the one hand, this fact generates situations of dependence between producers and users and on the other hand, it does not favour the development of some evidence-based policies. In case of producers, it also creates impediments to access and analyse the held data, in order to produce relevant and timely data.

Figure 15. The average score of ICT skills for data producers and users



Source: CIVICUS MDC and IDSI Research, 2016

166. A nationwide action by which the public institutions, the parties interested in implementing and monitoring SDG should get involved, is to **allocate resources for training the personnel** in using data and developing skills to work with specialized applications or at least with the MS Excel and MS Access packages for data processing in order to support the public policy decisions with evidence-based information.

Box 4. Successful partnerships and innovative solutions

semnătura mobilă

The Mobile Signature is an innovative service that enables the authentication in cyberspace for identity testing by using a mobile phone.

The service was launched as a result of collaboration between the Centre for Special Telecommunications, eGovernment Centre and mobile operators. Unlike other countries where the Mobile Signature was dictated by the banking sector, in the Republic of Moldova, the launching of this service is carried out through the partnership between Government and the private sector, in September 2012 .
With "Mobile Signature" the citizens can sign while away (remotely, online, various documents, reports, statements or demands). Equally, the citizens are able to access electronic services, both public and private.

167. According to the opinion of participants in the workshop, **it is necessary to have some planning of academic courses and courses of continuous improvement** in the field of statistical data processing and use, and creating, through a partnership between the State Chancellery and other state institutions, the Academy of Public Administration and other relevant education institutions, an education programme in the field of statistics for the departments that train specialists in public administration (and other similar topics).

168. Given the narrow spectrum of the labour force, which cannot be compared to those in Ukraine, Romania or Bulgaria, Moldova shall focus **its efforts on producing professionals who are ready to be employed**, through **partnerships between university departments/academia and private companies** to shorten the 6-month duration, average period of training (as claimed by companies during the interviews).[56]

Box 5. The SYSLAB Centers for innovative development of the career

The SYSLAB Centers for innovative development of the career[57] were created (as of June 2013) within the UNDP Moldova Project "Innovative Entrepreneurship for Sustainable Employment", based on the methodology of SYSLAB International AS, with the financial support of the Norwegian Ministry of Foreign Affairs and the UK Embassy in Moldavia. The centers were created and are operational in 5 locations in Moldavia: Chișinău, Rezina, Comrat, Cahul and Bălți. The objective is to train and assist the qualified unemployed, Moldavian migrants returning home and the graduates to obtain relevant jobs in the Republic of Moldavia or to start a business in order to prevent the brain drain and support the economic development of the country.

In order to facilitate successful employment for the beneficiaries of the Centers, **partnerships** were established with several universities, private companies in the field of business. More than 500 beneficiaries successfully graduated the SYSLAB trainings. Within these large partnerships data and information are transmitted to the responsible authorities, e.g. NEA, which based on these data, including those from the beneficiaries (the trainings undergone, new specializations etc.), establish the directions and priorities on the labor market. These way rational decisions are possible regarding the organization of specialized trainings, activities for being employed on the labor market. Therefore, the beneficiaries of the SYSLAB Centers become participants in the data circuit and ecosystem, contributing with an innovative element regarding data revolution (the data are received directly by the decision makers from the beneficiaries).

169. **There is no systemic approach in the professional training** for working with data both at the level of heads of institutions and the level of employees, which could jeopardize the data revolution process.

[56] Competitiveness Assessment of Moldovan IT Services Industry Prepared for USAID CEED II Moldova and Deutsche Gesellschaft für Internationale Zusammenarbeit (*GIZ*) GmbH, November 2014.
[57] Centrele SYLAB, http://www.syslab.md/

170. Therefore, **the existing capacities of human resources undermine the possibility of enlarging the scope for the capitalization and use of data from different sources** not only in the process of data collection and production, but also in the context of developing evidence-based data.

3.6. Infrastructure and ICT

171. For the process of data collection, production, dissemination, storage and analysis, the ICT infrastructure is a set of tools and technology resources. The existence of a developed and efficient ICT infrastructure represents one of the key elements in the context of reporting data related to SDG, providing access to information, increased transparency and accountability.

172. According to recent data, in the international rankings on development of information society, the Republic of Moldova holds the following positions:

i. ICT Development Index (position 61 of 166)[58];
i. United Nations E-Government Development Index (position 66 of 193)[59];
ii. Network Readiness Index (position 68 of 143)[60];
iii. Global Cybersecurity Index (position 16 of 29)[61].

173. The Republic of Moldova ranks second in terms of fixed telecommunications teledensity among the CIS countries (35.2 per 100 persons). Currently, the Republic of Moldova has the highest indicator among the CIS countries in terms of bandwidth of international Internet traffic per person (115.845 bits/sec./pers.). The mobile Internet network in the Republic of Moldova is one of the cheapest and it also meets high speed standards. This was possible due to the fact that the country has developed a 4G network and that services of number portability and mobile signature were introduced. Moldova has a high average Internet connection speed and holds an important place in the NetIndex ranking (6th in the world in terms of speed of downloading data from the Internet - 40.61 MB/sec). Although the Republic of Moldova is among the top 20 countries in the world in terms of the Internet speed connections, the broadband connectivity is not present throughout the entire territory with speeds that are necessary to meet current and future needs of the country.

174. The transition to a new digital ecosystem comes, however, with new challenges in the field of cybernetic security, data confidentiality and ICT measurement, which must be properly addressed. The connectivity and data processing capacity is based on the **ICT infrastructure**, the development and the use which in is uneven in Moldova, and the digital gap between the urban and rural areas remains an ongoing problem.

175. There are also several **challenges** that the institutions try to overcome in using ICT at the stages of collection, dissemination and analysis of data, namely:

i. Limited financial resources to maintain and renew the technology park,
ii. Insufficiency of the advanced IT equipment or the use of obsolete/outdated IS and unlicensed software products,
iii. Requirements that are overly specific for the procurement procedure,

[58] Measuring the Information Society Report 2014 / Geneva: International Telecommunication Union, 2014. 250 p
[59] United Nations E-Government Survey 2014. E-Government for the Future We Want, UN, New York 2014 https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2014-Survey/E-Gov_Complete_Survey-2014.pdf
[60] The Global Information Technology Report 2015: ICTs for Inclusive Growth / Ed.by S. Dutta et al. Geneva: World Economic Forum, INSEAD, 2015. 357 p.
[61] Global Cybersecurity Index & Cyberwellness Profiles. April 2015 / International Telecommunication Union Geneva: ITU, 2015. 515 p.

iv. Lack of ICT tools (software, licenses),

v. Lack of well-trained professionals in ICT (especially in the provinces),

vi. Lack of methodological coordination between institutions for the use of ICT for data collection and processing,

vii. Manual processing of data and generation of a high rate, in some instances, of wrong data,

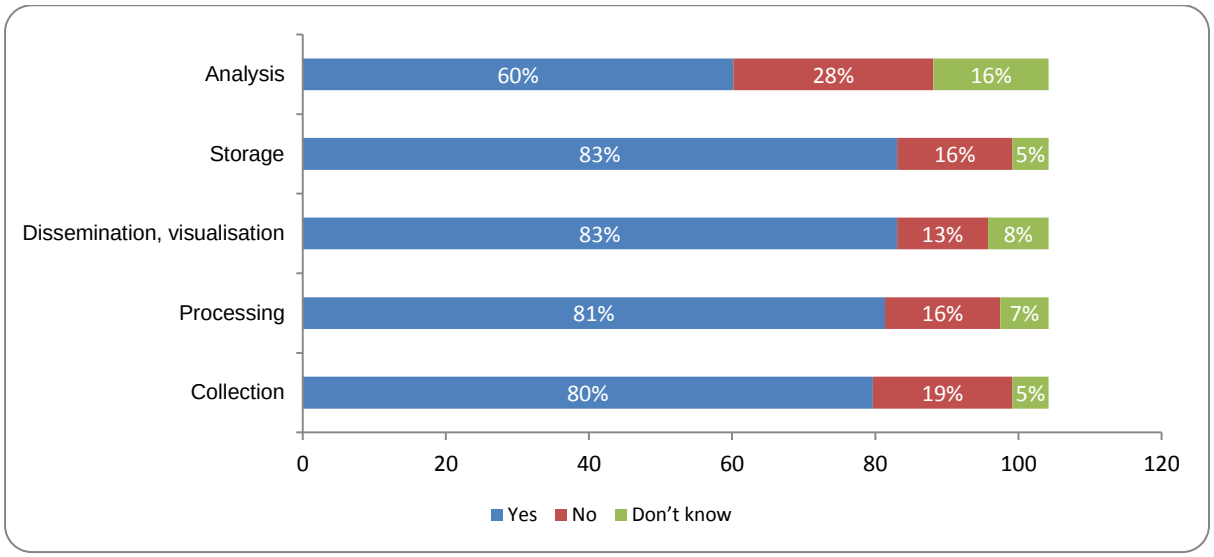
viii. Data calculated partly on paper,

ix. Lack of a data catalogue, one-stop shop/one-stop platform in the field,

x. Lack of homogenization/standardization of IT solutions.

176. The survey data reveals that the **availability of ICT infrastructure** is relatively high, but its quality leaves a lot to be desired. Most respondents (over 75%) have the technical capacities for collecting, processing, disseminating, storage and analysis of data. Thus, 81% of respondents have the technical capacity[62] for collecting, processing, and dissemination of data, while 83% - for data storage, capacities that are chiefly incumbent on the producers/owners of statistics. On the other hand, 60% of respondents have the technological capacity[63] of data analysis, these being mainly incumbent on the data producers - 60%, and less on the data users - 53% (Figure 16).

Figure 16. Technical and technological capacities available in institutions



Source: CIVICUS MDC and IDSI Research, 2016

177. It can concluded that although the technical capacities for data collection, production and dissemination are up to a point I insufficient, there is a **lack of capacities concerning the data analysis** both for data producers and users. In this context, we reiterate the need to strengthen the capacities following the data production process, namely, the activities of analysis and use of data available for decision making.

178. Being one of the most actual exponents of ICT, Big Data has a great potential for transforming the official statistics, and strengthening the dialogue between providers of formal and informal data, by reducing the costs and the time necessary for data collection, processing and production, as well as by improving process efficiency. In addition, **Big Data** can be used to produce statistics in a timely manner, to fill gaps related to data and complement official

[62] ICT equipment
[63] Applications and Tools

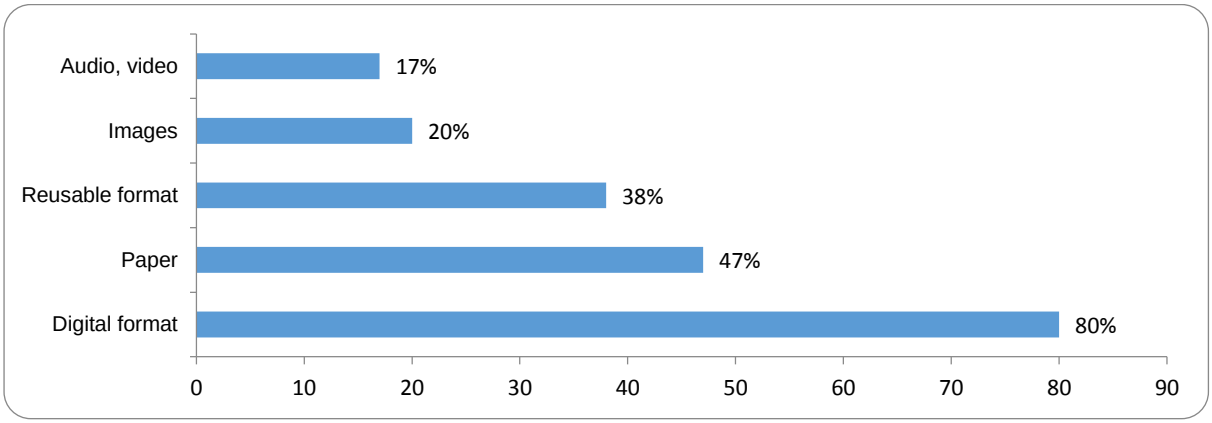
statistics. Currently, this concept exists only as an idea in Moldova, especially in academic circles, with no known practical application in the public or private sphere.

179. Despite the existence of technical capacities, 45% of respondents indicated that, at present, these **capacities are not sufficient for managing large amounts of data**[64]. Thus, the institutions involved in the process of data production and use are not ready for processing some sources of alternative and non-traditional large capacity data, such as Big Data[65], in order to produce statistical data. This situation indicates the need for modernization and optimization of ICT infrastructure in order to operate it exclusively for professional purposes.

180. The management of large amounts of data implies the existence of some data exchange tools. In this context, nationally, a range of IT systems and resources were carried out and implemented within the strategic Programme of technological modernization of the governance (e-Transformation)[66], also focused on interoperability, the MCloud Platform, platform services. However, **the problem of data interoperability and openness** has not yet been fully solved.

181. The concept of Data Revolution does not involve the access to data only, but it also envisages its availability in **a user friendly format**. Where there is a considerable amount of information posted on the websites, disseminated through publications and official requests by data producers/owners, using this data involves efforts for users to transfer them into a reusable format. Thus, every second data producer/holder disseminates the information traditionally, on paper, and every fifth person places information in the form of images (mostly PDF). On the other hand, we mention that the initiatives concerning the open data determined the change of the situation, so that 80% of respondents disseminate information in a digital electronic format (numeric), and 38% - in reusable format, which allows for several procedures for data analysis with various IT tools to be carried out, whether this is MS Office or specialized tools (Figure 17).

Figure 17. The existing format of dissemination of data and statistical information



Source: CIVICUS MDC and IDSI Research, 2016

182. Dissemination of data in formats easy to use is an ongoing challenge, but, at the same time, it is important that the users are to be trained in retrieving data in these formats (digital, numerical). The observation in the analysis of questionnaires by which, today, the citizens use Internet and web applications in the same proportion as requests on paper, must also determine a process of promotion and education in their data use (statistical literacy).

[64] The conventional criterion of more than 1 million records was used within the questionnaire

[65] Large unstructured data sets, which are owned by a company or not, generated anonymously or not by users, via web, by sensors, cameras, monitoring solutions, equipment, etc., in various formats and standards.

[66] Government Decision No. 710 of 20.09.2011, accessible on http://lex.justice.md/index.php?action=view&view=doc&id=340301

Box 6. Civic initiatives for opening data

- The **www.budgetstories.md** portal represents an instrument which ensures the framework for a higher level of understanding by the citizens and especially by the active part of society, of the manner in which the public finance system operators and of the manner in which it influences the daily life, understanding which will contribute to a higher level of involvement of the society in the budgetary process and more efficient spending of public money. The scope of the portal is to analyze and view the sets of open data in order to bring clarity in the field of public expenditures from different sectors.
- The scope of the **alerte.md** project launched in 2011 is to collect the problems submitted by the citizens on an online platform and to have them solved by the services of the Chișinău City Hall. Subsequently the municipality accepted the **alerte.md** project as an alternative to submit complaints and petitions, organizing to this regard several trainings for the civil servants working within the municipal institutions on how to use the platform. Being a successful electronic application that uses the data provided by means of the Open Data initiative, it is actively utilized by the citizens, by marking the social issues from a long list of areas on the map of the Municipality of Chișinău. In the period 2011-2016, more than 7000 problems were reported, out which 69% were solved by the municipal authorities. Besides direct and transparent communication between the city hall and the citizens, the platform generates useful data for decision makers at local level, not only in order to solve the signaled problem temporarily, but also in order to take certain decisions, approve certain long term policies.
- "**Școala Mea**" (My School) is an initiative of Expert-Grup which was launched in 2014. The mission of the project is to encourage the citizens to contribute, together with the national, regional and central authorities, to the promotion of better services in education. On the **www.scoalamea.md** website you can find data about the budget and performance of the schools. By opening data the "Şcoala mea" initiative aims to facilitate the involvement of each and every person in the creation of a more efficient, transparent and better schools.
- On the **www.bizzer.md** website you can find the data from the legal units regarding the enterprises which are registered in Moldavia (based on the open data in excel format – full file on date.gov.md). The portal allows the visualization of the data in an interactive, comfortable and simplified manner, displaying a search engine on the first page.
- **www.laetaj.md** is a portal that helps the citizens who want to purchase an apartment. The portal displays data about: founders and administrators of construction companies, the validity of their licenses, the litigations and charges before state institutions etc.; as well as data about the residential compounds newly built in the Municipality of Chișinău, the building permits and urbanism certificates issued by the City Hall of the Municipality of Chișinău, starting prices for the apartments and contact details of the companies building them. At the same time the portal contains the opinions of the real-estate agents and of the tenants of residential compounds, about the location, quality of works, planning etc. of the new residential compounds and the latest news in the field of constructions in the Republic of Moldavia. The portal is a product of A.O. Center for Transparency and Civic Participation „PARTICIP".

183. In the same context, **the opening of government data** by the public authorities, as part of the Strategic Programme of e-Transformation, can be also considered a challenge. Although the need to publish information on the Governmental Open Data Portal www.date.gov.md has been institutionalized[67], and there are currently almost 900 data sets, often their search is difficult, while issues such as data **availability, completeness, relevance, validity and timeliness** requires efforts on the part of all interested parties.

[67] http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=354533

184. Also, as part of the initiative for data opening, the e-Government Centre and other international bodies have encouraged and stimulated the development of applications based on open data. In this sense, the public spending database BOOST Moldova[68] can be mentioned, which was initially developed in partnership with the World Bank, as a source of very detailed information about costs in 2005, owned by the Moldovan Government through the Ministry of Finance, thus, the Republic of Moldova became one of the few countries in the world to publish all data on public expenditure in one consolidated Excel file. A downside of this initiative comes from the fact that the data format is a simplistic one, is not user friendly, and it is difficult to ensure the visibility of this information.

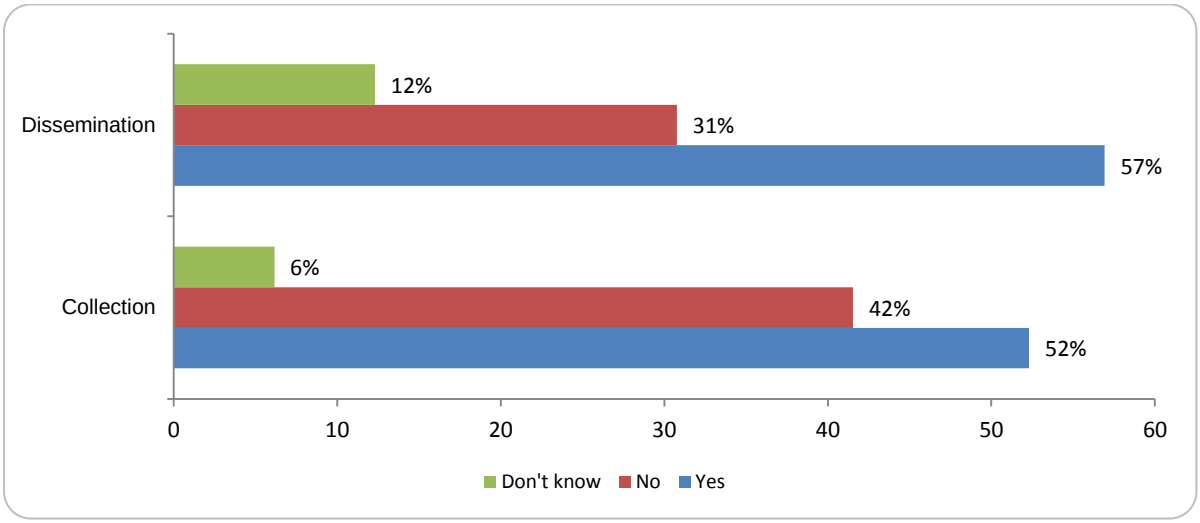
Box 7. International cooperation for tranparency of information and data

- The Ministry of Information Technology and Communications, in collaboration with the Center for Electronic Governance, published in 2014 on the date.gov.md portal some of the data from the State Registry of law units regarding the **enterprises** registered (approximately 200,000) in the Republic of Moldavia, with updating frequency monthly. In what concerns this chapter the Republic of Moldavia occupies the 3rd position at global level in the field of "Open Company Data Index"[69] (the global initiative of Open Corporates). The data refer to the main information about the companies (year of establishment, identification data, registered headquarters), information about the shareholders of these companies, as well as information about their operating licenses.
- The **www.amp.gov.md (Aid Management Platform)** information system developed by the State Chancellery with the support of UNDP and of the company Development Gateway, manages the **external assistance** for developing the Republic of Moldavia which presupposes monitoring the external assistance projects and programs, geographical visualization and visualization on maps, geographical localization of the projects implemented in Moldova, as well as the possibility to generate the reports following the requests of the users.
- In June 2016, by means of the collaboration between the Public Procurement Agency and the Center, for Electronic Governance, the initiative on "**open contracting**" was implemented with the support of the World Bank. This initiative aims to open the data regarding public procurements. Two basic principles shall be applied in order to open the data: availability of the data regarding all the stages of the procurement process and civic involvement (the monitoring of the procurement process shall be performed by the civil society, observance of the contractual clauses etc.). The portal will ensure the possibility of viewing data in an interactive manner and will facilitate the information process on the companies participating within procurements, thus it will be possible to analyze the participating companies, their history, the value of the contracts, information about the sector with the best public procurement contracts, with the highest number of contracts with the state etc. Therefore, the portal will provide useful data for those launching the call for proposals as well as for those submitting the bid.

185. Due to the legislation on personal data protection[70] that is in force, data producers and owners began to pay greater attention to issues related to data privacy, personal data processing, informing the public about these issues etc. However, more sustained efforts are needed in this regard, because, as the data of the study show, only over 50 percent of data producers and owners make the information on the manner and conditions of data collection (52%) and dissemination (57%) available for the public (Figure 18).

[68] http://www.mf.gov.md/actdoc/BOOST
[69] http://registries.opencorporates.com/jurisdiction/md
[70] http://lex.justice.md/md/340495/

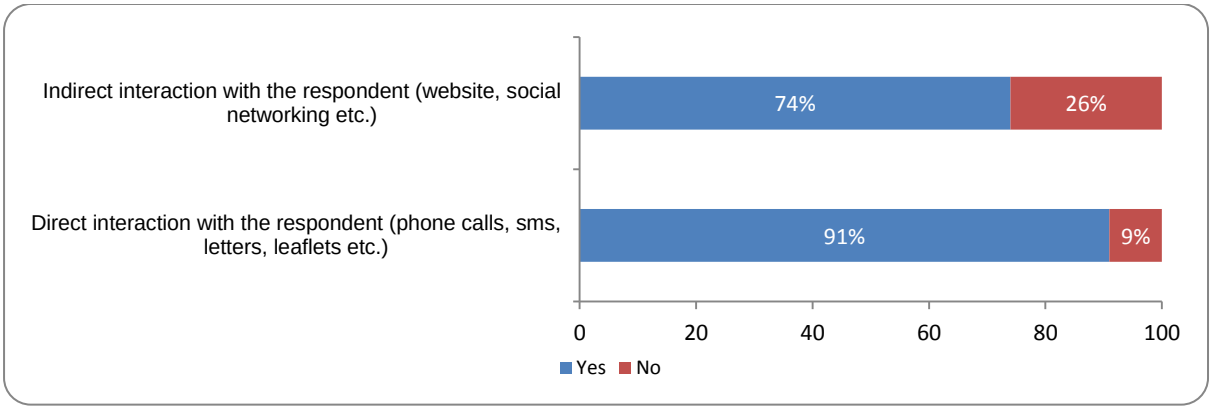
Figure 18. Availability of information on the manner and conditions for data collection and dissemination



Source: CIVICUS MDC and IDSI Research, 2016

186. Despite the increased level of availability of technical infrastructure and the expansion of the use of Web 2.0 technologies (social networks etc.), the interaction of data producers/owners of data with data providers is predominantly performed (91%) through direct mechanisms - phone calls, SMS-es, leaflets etc. However, almost three quarters of respondents (74%) widely use indirect interaction methods - such as the website, social networks, as these methods facilitate the interactive information sharing, interoperability and collaboration between data producers and users (Figure 19). This is explained in part by encouraging initiatives promoted by the e-Government Centre **on the use of social media by public authorities**[71].

Figure 19. Mechanisms of interaction with data providers

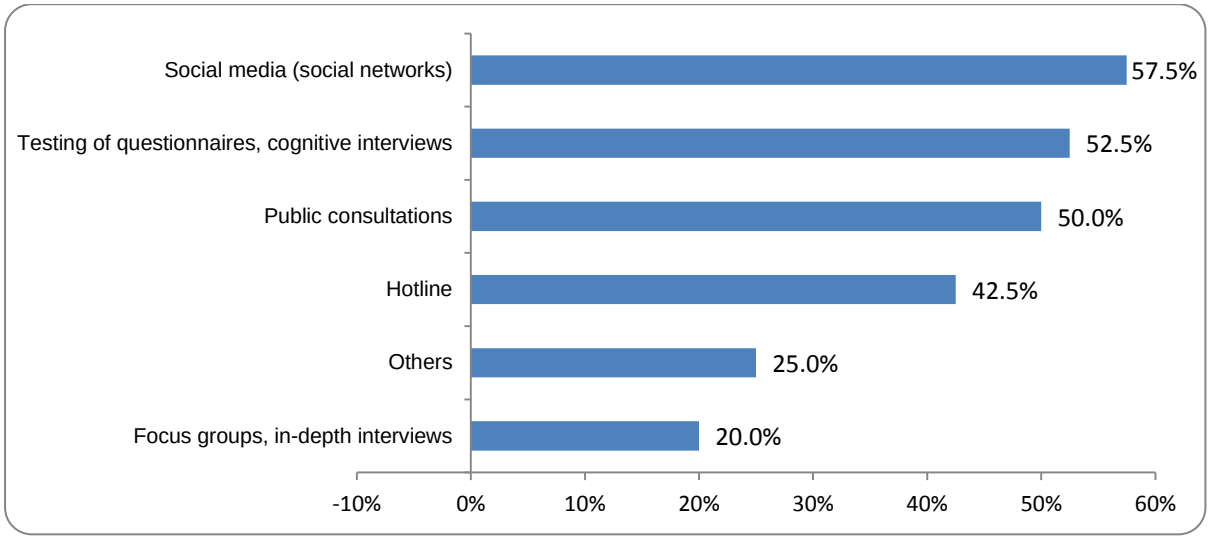


Source: CIVICUS MDC and IDSI Research, 2016

187. In the context of ensuring the reverse link with respondents/ providers of data on the way to collect and use data about them, the survey data reveal that only 61% of data owners/producers have this possibility (Figure 20). Of these, the majority (57%) uses social networks as a means of interaction, 50% resort to public consultation, while 42% use the hotline. The importance of communication about the available data, awareness raising of the data users, training of employees for using new forms of communication with the public - all these needs were highlighted by participants in the workshops.

[71] Regulation on the use of social media in governmental institutions.http://www.egov.md/ro/resources/guides-and-documents/regulamentul-privind-utilizarea-retelelor-de-socializare-institutiile

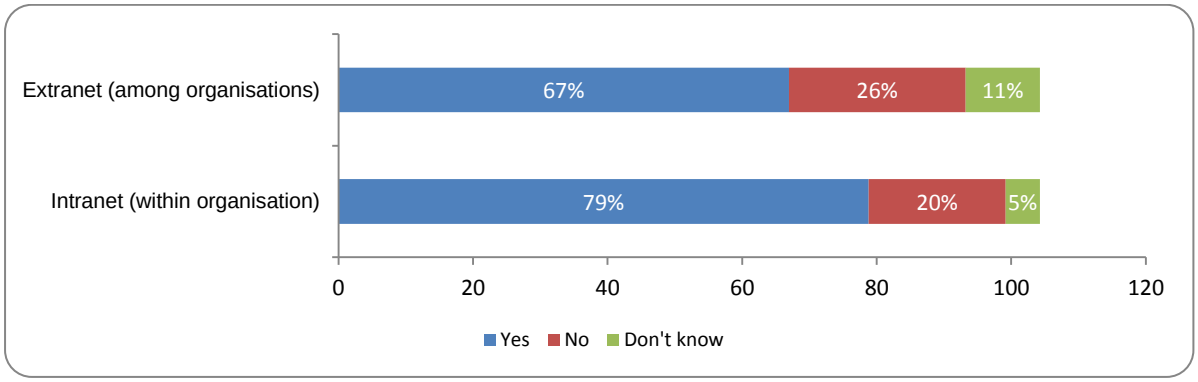
Figure 20. Ways used to provide reverse link with data providers



Source: CIVICUS MDC and IDSI Research, 2016

188. In terms of data access and availability, the study reveals the existence of intranet connection in the case of 78 percent of respondents, while 67 percent of respondents have as well capacities for exchanging data between institutions (Extranet) (Figure 21). This is largely due to the online access of public administration bodies to MConnect **interoperability platform**, managed by the e-Government Centre and state registers, managed by the ICT Ministry and the Justice Ministry. Thus, the existence of data interoperability represents, albeit at a moderate level, an important support for data exchange and communication in the SDG implementation and monitoring.

Figure 21. Situation of intranet and extranet connection

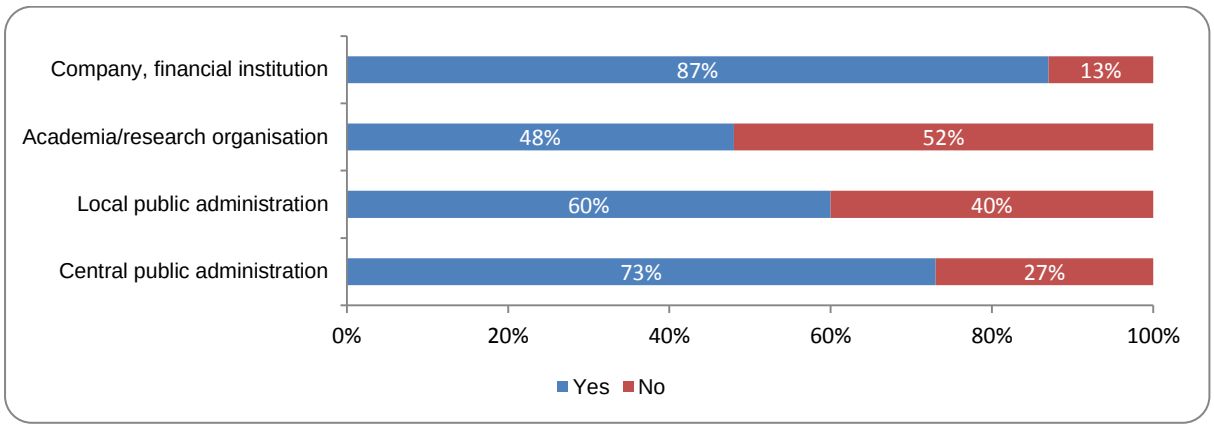


Source: CIVICUS MDC and IDSI Research, 2016

189. The respondents are equipped with tools intended for **data dissemination** in most cases (68%), which facilitates the carrying out of a reasonable dissemination of data. Most producers and users have the platform or a special compartment on the website intended for data dissemination. The most advanced in this respect are the state-owned and private enterprises and the financial institutions (banks) - 87%, followed by the central government - 73%. These data show that the state-owned and private enterprises, financial institutions lay more emphasis on developing tools for informing and providing access to the available services and products. The statistical information on the activity of the CPA bodies can be accessed in case of 73% respondents, and if we refer to local authorities, their share is even smaller (Figure 22). This proves once again **the gap between central and local authorities** concerning the implementation and effective use of ICT infrastructure (Figure 24). In this respect, it is necessary

to boost the process of computerization in the rural sector and create an effective mechanism for managing the financial resources allocated for computerization at the national level.

Figure 22. Availability of the platform or the special compartment on the website intended to disseminate statistical data and information

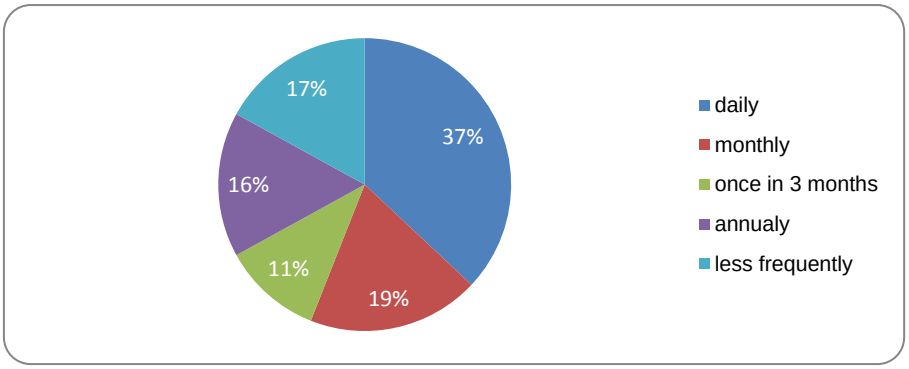


Source: CIVICUS MDC and IDSI Research, 2016

190. Less than half of the institutions that relate to the academic environment and research institutions do not have such tools which limit the access of the large public and users to activities carried out by them and the available data resulting from various scientific researches and case studies.

191. An important factor concerning the access to data and statistical information is the update frequency. Generally, we find that the information is most often updated daily (37%), monthly or quarterly (31%). But there are institutions that update the information less frequently than once a year (17%), which undermines their transparency, and possibly the level of awareness and influence of citizens upon the decisions related to the activity (Figure 23).

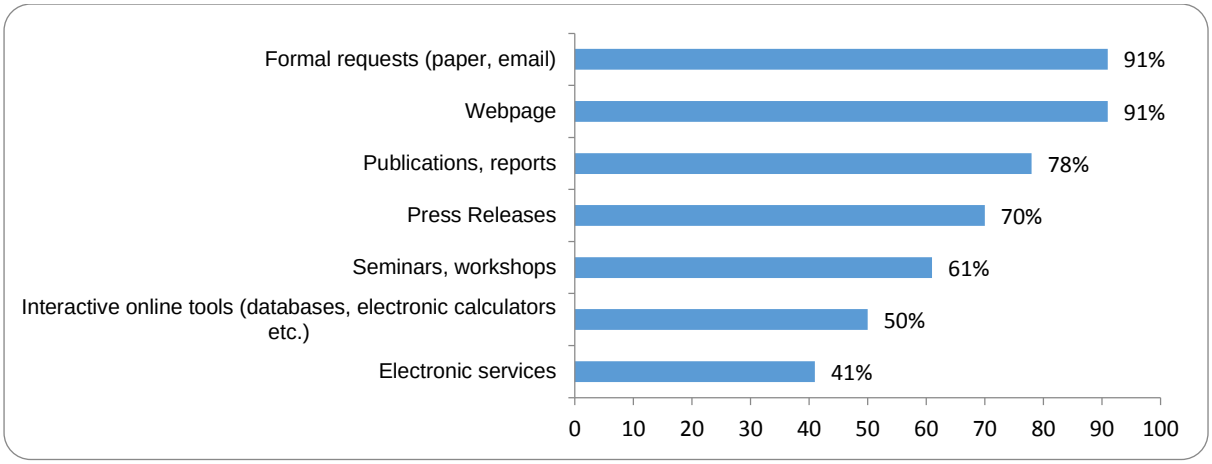
Figure 23. Dissemination of data, update frequency



Source: CIVICUS MDC and IDSI Research, 2016

192. The level of use of some **interactive tools for viewing and analysing online data** (databases, electronic calculators etc.) is very low and only half of data producers/owners provide these tools to the users. As a result, the dissemination of statistical data still takes place mainly by traditional methods (web page, official requests, publications, reports, releases etc.), which requires certain time restrictions in obtaining data and performing additional calculations where needed. However, about 60 percent of data producers/owners do not have electronic services for data dissemination, therefore, this sector needs to be strengthened in the future (Figure 24).

Figure 24. The tools used by citizens to access data



Source: CIVICUS MDC and IDSI Research, 2016

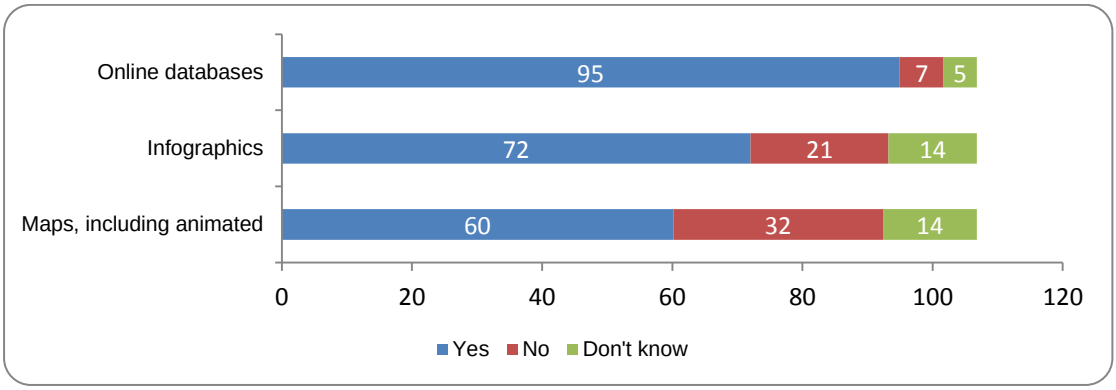
Box 8. Interactive tools for online data viewing and analysis

The website of the National Bureau of Statistics of Moldova, www.statistica.md, provides the general public and communities with a number of interactive tools for data viewing and analysing online. These include the Bank of statistics of Moldova, which provides relevant information by fields, animated maps and graphics. The animated pyramid of the population, life expectancy calculator, and the calculator of the Consumer Price Index.

Opening and viewing statistical data through some interactive tools facilitates the transparency, and, especially, the possibility for all interested parties (civil society, business sector etc.) to observe and report the need for some partnerships, some amendments to the legal framework, some corrective and preventive actions etc.

193. The involvement in data revolution by interested parties in the context of improving data accessibility calls for future commitments both from the perspective of data producing and assuming certain responsibilities to promote and use the interactive tools to access and visualise data. Currently, heads of organizations/institutions promote to a lesser extent the use of maps, including the animated ones (60%), computer graphics (72%), which derives from the limited capacities of data producers and users for their creation, and they resort more frequently to the use of online databases to access data of interest (95%) (Figure 25).

Figure 25. Usage of data visualization tools, %



Source: CIVICUS MDC and IDSI Research, 2016

194. In the process of exploring data, users often face a lack of information on the manner and conditions for data collecting and dissemination. Every second data producer does not have metadata that refer to the data content, conditions and criteria for collecting them and, especially, the ways the data are disseminated and the period of their availability for the general public. Thus, **a rift between information producers and consumers** is created,

which involves difficulties for information accessing, perception, interpretation and analysis, and, possibly, delayed reactions to certain events. The implementation of metadata is a process that must be supported by technology, people and processes, but their importance is unquestionable in providing transparency in data management.

195. In its efforts to develop data fluxes and identification of innovative solutions on the production of statistical data, in a joint effort between the ICT expert communities, the research-development environment and think-tanks, long-term partnerships can be created for developing joint, by sector or integrated, solutions. In this regard, there is a potential for intensifying the collaboration of institutions with the ICT community, whereas only 52% of them stated that they interacted to promote innovations in data production and use.

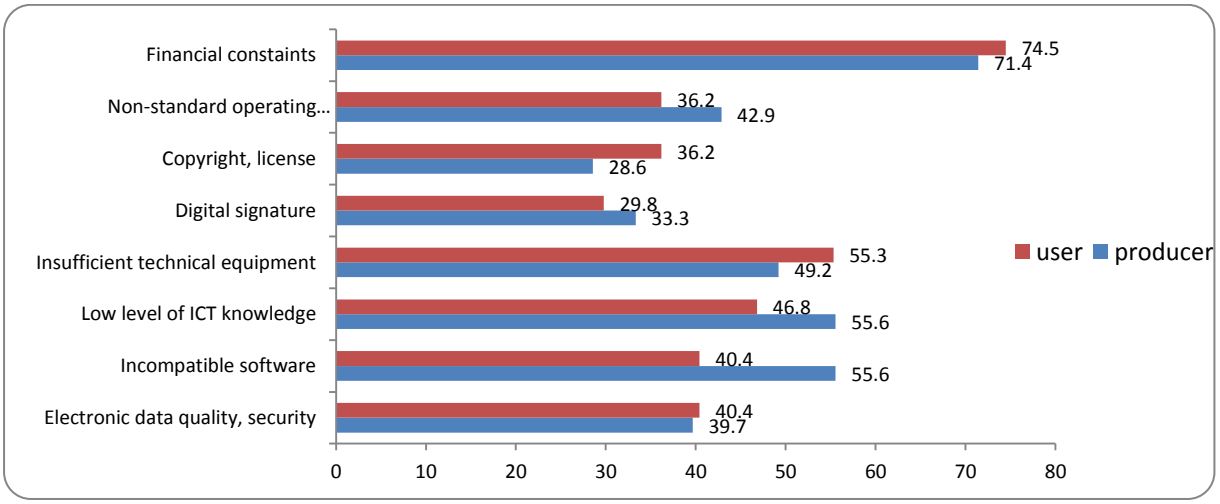
Box 9. Innovative ways of working with data

At present, some public institutions use as alternative (innovative methods) for data collection, analysis and presentation - specific software, automated registers (eg. The State Register of Voters is interconnected with the Registrer of Population), information systems (eg. Civil Service - population records; MICT - population documentation system etc.).

196. However, the study reveals certain **impediments in using ICT for data processing and analysis**. The financial constraints are the main factor invoked by the respondents (71%), which cause directly both the insufficiency of technical endowment (50%) and the possibility of creating ICT skills (50%). The digital signature (33%) and copyright/license are considered to be minor impediments in using ICT (31%). This stems most likely from the use of unlicensed software and insufficient promotion of digital signatures in providing public services.

197. From the perspective of data producers, the impediments that refer to data production and exchange are the ones to prevail, among which software incompatibility (56%) and low level of ICT skills (56%), which prevent data producers from meeting challenges on the application of new techniques of data collection and modernization of processes concerning data management, on the whole. For users, these factors are less important, but impediments arising from copyright, license (36% vs. 29%) and insufficient technical equipment (55% vs. 49%) prevail (Figure 26).

Figure 26. Factors that limit ICT access and use for data processing and analysing, %



Source: CIVICUS MDC and IDSI Research, 2016

198. According to the results of the study, **insufficient capacities on data analysis** both for data producers and users can be observed, including the lack of training of institutions involved in data production and use for processing some alternative and non-traditional sources of data

of large capacity, such as Big Data, in order to produce statistical data. The main impediments in using ICT for data processing and analysis refer to **financial constraints**, insufficient technical equipment and the opportunity to acquire ICT skills. Data producers face, in particularly, problems such as **software incompatibility** and **low ICT skills**, which prevent them from meeting challenges concerning the application of new techniques of data collection and modernization of processes concerning data management, on the whole.

199. On the other hand, the survey shows that the vast majority of stakeholders in the data ecosystem have **technical capacities for data collecting, processing, dissemination, storage and analysis**, while the **interoperability of data**, although reaches a moderate level, is an important support for data exchange and communication in the process of SDG implementation and monitoring. At the same time, nationally, there are sufficient public institutions, research centres, centres for ICT skills development, projects and programmes for constituting **active ICT communities**.

200. Therefore, **the efficient and consistent use of the ICT infrastructure**, combined with modernization, where appropriate, of the applications software, development of innovative applications for data collection and interaction, and increasing intra and inter-institutional connectivity and between partners of data ecosystem data, will confirm the position of crucial support of ICT for data revolution and will compensate for the lack of human and financial resources in data processing.

3.7. Funding the data ecosystem

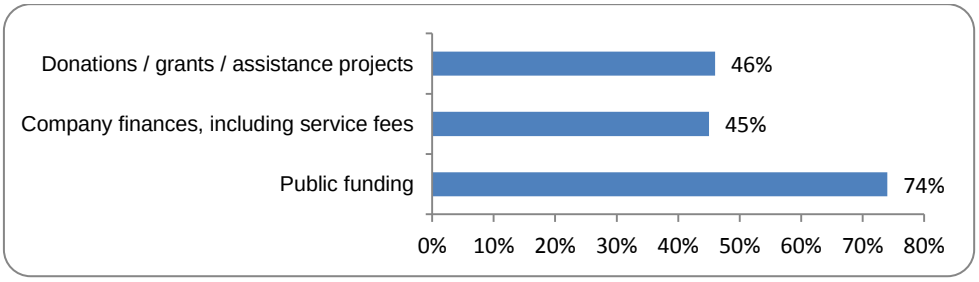
201. The **data ecosystem** is generally **a consumer of financial resources** and, in this case, it is in direct competition with other beneficiaries of resources, especially in case of organizations that are directly funded from public funds. Since the financial resource is a limited one where public budgets are concerned, it is necessary that the performance and the utility of the data, that the ecosystem produces, respond to the purpose of the society, that is, the delivered data are useful in taking decisions for the sectors that compete for resources and help these sectors to streamline their activities.

a) Funding data collection and processing

202. In the process of data production, the collection and processing involve human resources, ICT infrastructure allowing for the production of indicators according to the recommended international standards or requirements for monitoring and evaluation, in our case for SDG. Generally, **data production at the administration level is considered an action of a lower priority** and, consequently, the allocation of resources is evaluated in comparison with other chapters of expenditure or actions requested for the operation of an organization.

203. Such activities that have as a purpose the production of statistics in Moldova are mainly funded by public funds (generally, the state budget), 44% through their own means or for hire or reward and 28% from donors' funds, through grants or assistance projects (Figure 27).

Figure 27. Statistical process financial sources structure, %



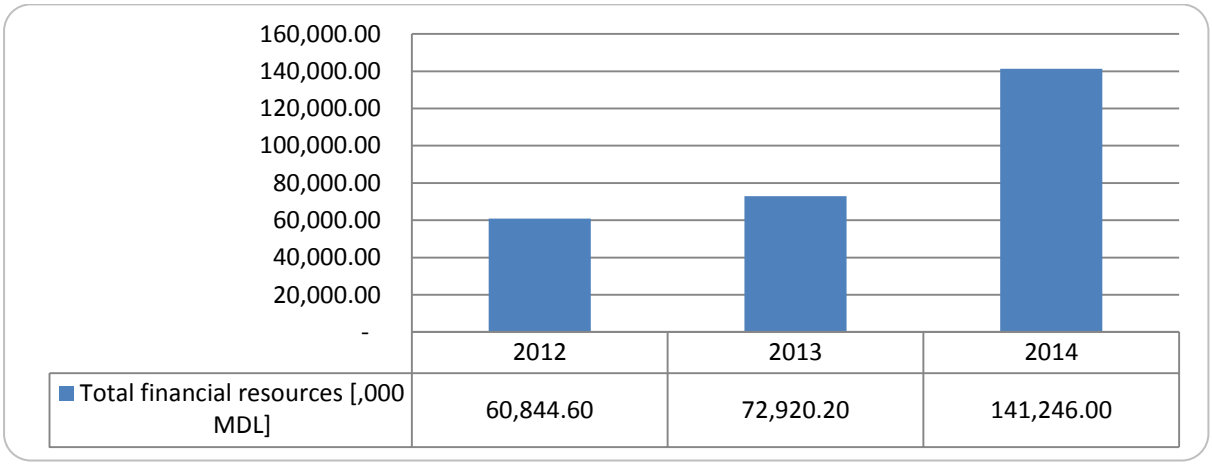
Source: CIVICUS MDC and IDSI Research, 2016

204. The **allocation of resources** to collecting and processing can be considered as **indirectly through the funds provided for the operation of the organization** (e.g. human resources - salaries, professional training; logistics - utilities, consumables) or through funds intended for carrying out investments in the infrastructure and ICT applications, which can be perceived as a lack of priority in the allocation of resources for data collection and production, as the participants in workshops on ecosystem data said (see Annex 8- Participants responses to work assignments).

205. Except for the Strategy for Development of the National Statistical System 2016-2020, the **analysis of the strategic documents did not reveal activities funded exclusively to produce data**, but it can be assumed that the development of surveys necessary for assessing the satisfaction degree of the citizens or beneficiaries of various measures published in the action plans of the strategies will be funded, in general, from the state budget for public authorities or from the income and expenditure budget in case of some state-owned or private organizations.

206. On the other hand, in the Republic of Moldova, **funding official statistics is a legal obligation** of the state for the services and products produced by the NBS and public institutions of the NSS. From 2010-2014, the budget allocated for statistical services and provision of the products specialised in statistics of the NBS, the main producer of statistical data was insufficient and in nominal value had about the same amount every year[72], accordingly, about MDL 70 million, the equivalent of USD 3.5 million (see Figure 28).

Figure 28. Financial allocations from the State Budget for NBS 2012-2014 (including the allocation for PHC)



Source: Strategy for Development of the National Statistical System, 2016-2020

207. Where NBS is concerned, **additional funds have been allocated for specific actions or major statistical works**, such as censuses, but the need for financial resources has not also fully covered the operational component (additional human resources, continuing training, informational infrastructure, physical infrastructure).

208. It can be noted that **a major role in supporting data production is played by international donors**, who, through funded projects, directly allow the development of data production services (see, for example, the Regional Statistics in the Republic of Moldova Development Project), as well as indirectly helping the statistics production, accordingly in the acquisition of ICT systems and applications, training in implementing certain standards requested by statistics or training the personnel in producing statistics. These projects funded by donors require from the authorities and relevant parties the capacity development for drawing and manage external funding.

[72] The annual NBS budget amounted, on the average, to MDL 70 milion - http://www.statistica.md

b) Funding of access and of availability of data

209. **Data access and their availability** in the format, at the time and disaggregation requested by the beneficiaries may be grounds for use of additional financial resources. In the analysed documents and discussions held with participants in the workshops, **no clear delineation of funding problems by these categories** was observed, because, generally, the subjects, except for NBS, do not make a distinction between the activities of data production and dissemination or providing access to data, and, therefore, there is no emphasis when it comes to allocating financial resources needed for this category.

210. **Data dissemination and access to public information are regulated by law**, and the availability of websites for more than 75% of the public authorities and other interested parties in the data ecosystem (see Chapter 3.6 – ICT Infrastructure) allows for and ensures data publication, and, accordingly, compliance with legal requirements. The problem of publication is related to the structure of data and the used format, which could **require additional resources for conversion into editable digital formats (XML, XLS etc.) or for update**.

211. **Operation of statistical services, ICT departments or those of relations with citizens**, as organizational structures **within public authorities**, by which the publication and dissemination of information is provided, **is funded under the operational budget**, while the dissemination activities are part of the current duties of the employees, which do not require additional resources.

212. There are also situations where the dissemination of information is achieved by **publishing reports, catalogues and reports** for **which funding is performed from the operating budget** and resources are allocated in the cycle of budget programming or through funds allocated for projects by donors, but they are not significant as an amount at the institution level, even if they are highlighted in the budget. The **process of publication on the website** of the institution **is easy and commonly practiced, the costs for this process being assimilated in the annual operational budget, indiscriminately, on budget lines.**

c) Funding of analysis activities and data use

213. With the same coordinates as funding data access and availability, in the documents examined or after analysing the information provided by the involved parties, **no situations are revealed regarding the analysis activities and data use that would have consistent budget allocations** through the budgets of the institutions or provisions through the budgets of the action plans to implement the strategies.

214. Analysis and data use activities have sources allocated through the institution budgets for current activities of the employees of bureaus and services and are not distinct within the institutions by types of activities. If the analysis requires specialized consulting, resources are allocated in the budget, but this has not been highlighted until now in the strategic documents or in the annual budgets of the institutions and organizations of the involved parties. One possible explanation of the lack of such funding might be the collaboration the institutions have with the NBS and under the legal framework, through which the **statistical works are funded from the state budget, while the analysis process is directed through specific works commissioned to the NBS.** But this also demonstrates the low degree of internalisation of the capacity dedicated to using data to design and adjust evidence-based policies and their subsequent monitoring.

215. **Development of data compartments at the institution level**, as intended by the Government (see Chapter 3.1), also involves providing skilled services of analysis and of data use to support the decision-making process. In this context, correlated also with the necessary skilled human resources (Chapter 3.4), it may **be considered that sources for funding training and acquisition of skills by specialists in data use and analysis are necessary.**

216. These resources that are necessary for training, that are recorded in the annual budgets of the institutions/organizations are not included or will be included as a separate position for analysis. For this reason, the situation of **non-desegregation of budgets for data analysis and use** in the action plans of the organizations and **merging with the data production process** is explainable, while **in terms of financial resources**, they are not different from those already recorded (public budgets, own budgets, grants or funding from donors).

217. The SDG implementation and policy framework adjustment in Moldova shall be based on the production of statistical data according to the defined indicators, on their analysis and use, and on ensuring data access and availability in all environments and for all users, and this will increase the data amount and conditions for data production. Thus, in order to achieve the performances required for SDG monitoring, an **adjustment of financial resources to develop statistical processes shall be necessary**.

218. The increase of the amount of information and statistical data requested by the society will require **correlation between data producers and owners to optimise the statistical processes and balance their budgets**, with the inclusion of operating costs and ensuring through sustainable funding, public and private, the human and material efforts involved in the process of statistical data development.

219. The practices of **attracting financial resources for data-based thematic studies and analyses** are **not systematized** and it may be said that the resources are not used efficiently. A **medium-term plan concerning the works in statistics and SDG is required, which will be correlated with the available funds from domestic sources, public or private, and international sources**.

220. The **financial resources allocated** for data production are generally **insufficient**, due to the inadequate **budget components** compared to the actual needs, can be **compensated for by an international collaboration supported as well by external technical assistance and active funding.**

221. The **opportunities available** for the Republic of Moldova **through the international cooperation agreements**[73] for the development of economic and social sectors **shall be explored and exploited**, as well as the cooperation and **support programmes for the development of statistics**[74] to **fund the development of medium and long-term projects and programmes dedicated to the production of statistical data** (for example, transposition of the ACQUIS in statistics, development of information infrastructure and ICT, introduction of quality management in statistical processes, continuous integrated training of the personnel with statistical duties, data usage and analysis etc.).

[73] EU Association Agreement signed in 2014, partnership with the World Bank
[74] See the Strategy for Development of the National Statistical System 2016 - 2020, Annex 4.1

Section IV: Recommendations for a successful "Data Revolution" in Moldova

222. Mapping the data ecosystem allowed the analysis of the operating process, highlighting the current situation and the ecosystem's needs. Its needs were addressed in terms of the legal framework and procedures applied in statistics and data work, data policies and data availability, human resources and their training in order to generate and use data, the IT&C infrastructure and resources necessary in order to support the ecosystem. However, the analysis of the data ecosystem was based on the relevant actors for whom the resources listed above are designed, and the innovative solutions are decisive in achieving the data revolution and supporting by proof/data the implementation of the national strategic objectives aligned with the SDG targets.

223. Thus, following the mapping activity, we acknowledge the need for action nationwide in order to involve relevant partners in **strengthening the governance process through partnerships**. It is essential to **empower** the citizens and civil society with more responsibility, to involve them in the decision-making process, which calls for **developing the skills** of these categories **to participate in the generation of data and to use and consume statistical information.**

224. It is important that the stakeholders of data ecosystem, such as academia, private sector, local public administration, civil society, would undergo a process of information and knowledge about the objectives of sustainable development. This process is necessary in order to establish **functional partnerships, beyond the traditional participants like ministries and public agencies, between public authorities, data producers and holders as well as other stakeholders** in order to collect, process and use data. Thus, all the stakeholders can be actively involved in the actions for implementing, monitoring and evaluating the progress of the SDG which Moldova will undertake in the future.

225. The importance of **integrating statistical information and data in the substantiation of the development plans** in the medium and long term is highlighted, which determines an adjustment and alignment of the legal framework on data and statistics to the new concepts of data revolution. This process calls for the revision of national policies with explicit provisions on the authorization for open data, but also requires the development of new skills for data communities when applying the principles regarding the quality of data.

226. **The National Statistical System,** including NBS, which has the highest contribution to the data ecosystem in Moldova, **must be strengthened** through the implementation of the measures defined in the draft 2016-2020 Development Strategy [75]. **The transfer of competences and skills in the implementation of quality standards** for the statistical production processes used by the NBS at the level of the stakeholders will strengthen the general statistics system and will lead to an active participation of **all the members of NSS** in a streamlined and efficient monitoring of SDG.

227. It is necessary to develop **capacities to produce statistical data of the other stakeholders interested in the ecosystem**, especially for ministries and public agencies by legally regulating the procedure for establishing the status of official statistics producer. In this context, it is important to allocate resources so that NBS would support the certification/confirmation process of new statistical data producers, including in order to perform the qualitative analysis of statistics which shall be developed by other institutions or members of NSS (Statistical Capacity Building Indicators Assessments - PARIS 21).

[75] See "The 2016-2020 Strategy for Developing the National Statistical System", UNDP Moldova, NBS Moldova, 2015

228. The large volumes of **data relevant to the production of SDG indicators, which belong to domestic data holders** or which are managed by those responsible with monitoring and evaluation, compared to the number of indicators currently belonging to existing producers of statistics[76], highlights the need **of introducing and strictly observing the quality procedures and standards** during the production of data by all categories of stakeholders. Also, in these circumstances, **a proper distribution of tasks** is needed among the members of data ecosystem, but also **an appropriate allocation and efficient use of resources** during the implementation and monitoring of their national SDG and reporting process.

229. The requirements for monitoring SDG and the challenges of the limited number of human resources trained in the field of statistics, as well as the limited liquidities for data production can be solved by observing the legal framework on statistics and by properly organizing and structuring the activities and responsibilities of the stakeholders. In the context of the complexity of the 2030 Agenda, it is essential for the **monitoring task to beacknowledged and fully undertaken** by those developing public policies instead of being erroneously attributed to statisticians. Thus, the data are not a value in itself, but a key element within the public policies cycle.

230. In order to achieve a data revolution, Moldova **must make effective use of the existing IT&C infrastructure in the field of statistics**. This can be supported through the modernization, where appropriate, of the software applications, through the development of sustainable and cost-effective innovative applications for collecting data and increasing connectivity and intra- and inter-institutional cooperation, as well as through the interaction of data systems between the ecosystem partners.

231. Moldova **has to explore in a more intense manner the innovative ways of producing data** (Big Data including text messages, real-time data, semantic analysis of social media, etc.) throughout the data ecosystem structure (from the promotion, production and/or use of data in the activity of organizations/institutions) and also take full advantage of data from managing sources and statistical surveys based on direct inquiries (sociological surveys, interviews, focus groups) that meet the quality criteria required in public policy decisions.

232. Similarly, the innovative **methods and solutions must be introduced in the official statistics at the level of NBS and administrative data holders**, which will allow solving data requirements and provide greater efficiency in the use of the ecosystem's resources. Based on the feasibility of innovative methods taken from official statistics, these could be extended to the entire ecosystem, under the methodological coordination of NBS, thus encouraging and increasing the confidence in innovations and ensuring **the sustainability of the processes of collecting, producing, disseminating and using data**.

233. Also, the actions in the formal education and information on **literacy in the data field** (*data literacy*) are absolutely necessary in order to enable the development of skills and to allow the efficient and full use of data in the decision-making process. A qualitative training process should be taken into account at the level of the national education system in order to become familiar with the data and data sources and which would encourage partnerships between the stakeholders and the academia and adult training sector for the production of statistical data.

234. The future lines of action for data revolution, drawn from the findings of the mapping process and considered in this report are set out below in the section, namely: a) integration of statistical data in the planning processes; b) development of collaboration opportunities and partnerships regarding data revolution; and c) promotion and implementation of a set of actions with potential of quick wins.

[76] See Chapter 2.1, Mapping of SDO Indicators

4.1. Substantiation of the planning processes with statistical data

235. Within the implementation process of the 2030 Agenda for sustainable development in Moldova, the public authorities, stakeholders and development partners must take into account the singularity of the country and region where Moldova is located, as well as the UN recommendations provided in documents which were issued at the same time with the SDG launch (see the ***References*** of this report), which clarify, give examples of lessons learned and best practices regarding the nationalization and reporting of SDG and reporting of targets and indicators.

236. One of the recommendations consists of using or activating the prerogatives of the Prime Minister and the Interministerial Council for Strategic Planning[77] in collaboration with the development partners and civil society, academia and private sector, in order to **secure and undertake the targets and SDG indicators specific for Moldova**. It is desirable to ensure that the appropriate level of coordination and leadership by the political and administrative governance in order **to connect the "Moldova 2020" strategy to the 2030 Agenda, as well as to revise and correlate the national strategies with the SDG.**

237. **The actions on revising and correlating the strategies have to be consistently led and coordinated** in order to create and **reconfirm the partnerships and collaboration commitment among the stakeholders involved in their implementation.** These partnerships should also support the production, dissemination and use of data and the **participation of the data community in the decision making process**. Moreover, the stakeholders should be involved in the **development of analyses assessing the impact of public policies** on society using quantitative and qualitative data resulting from the activity of monitoring their results from multiple sources and by using long-term forecasts of the social, economic, environmental, administrative impact they will produce at the societal level.

238. **The monitoring and evaluation framework of the strategies should also be revised and the indicators proposed for SDG should be adapted** to the national context. This will allow the possibility of relating to the known international references (including adopting confirmed procedures), eliminating data redundancy during data production and the efficient use of limited resources (human, logistical, financial). Also, this framework will allow the allocation of responsibilities and tasks among stakeholders in implementing and monitoring the achievement of strategic objectives aligned with SDG, as well as a high level of coordination and accountability for progresses against the country's population and the international community.

239. The institutionalization of the monitoring and evaluation framework can be complemented by a dashboard, IT&C tool/platform for **viewing and disseminating information on the progress of implementation of strategic objectives** and indicators of all approved strategies and will foster the active involvement of stakeholders interested in using the results to adjust public policies and to achieve the SDG indicators.

240. In supporting the implementation of strategies and stakeholders' accountability for results, it is important to include the funding sources for data in the strategic plans, mentioning them in MTBF and in the stakeholders' operating budgets. This will support **the implementation of evidence-based strategies** and tools will be provided in order to motivate the participants to the data ecosystem. Linked to the need for financial resources, the stakeholders must further develop their skills **to attract funds** to support diversification of funding sources used in a responsible manner for the production, dissemination and use of data, but also for implementation, monitoring and evaluation.

[77] GD no. 838, July 9, 2008, on the establishment of the Interministerial Committee for Strategic Planning, http://lex.justice.md/md/328564/

241. All actions which are necessary for the planning and evidence-based decision-making process are founded on data generated and available for the analysis and evaluation of strategies and public policies. Data revolution requires that these **data (indicators) should be mentioned in the phase for preparing strategic documents** and should be tailored to the subsequent purpose and needs of evaluation. For this reason, for the subsequent cycles of planning at the national and/or sectorial level, the necessary statistical data should incorporate different sources, including administrative data, and should also provide geospatial information for comparison and differentiated application of policies or their analysis, as appropriate.

242. It is important to create **institutionalised certification mechanisms** (e.g., through Government Decisions) proposed by the NBS and based on the principles of statistics regarding the rules and standards for all administrative data producers and data holders, interaction procedures between different authorities for the production, dissemination and use of data.

243. Until the localization of SDG, the decision-making process and the revision of the strategies should be facilitated in order to exploit the current statistical information available in Moldova. At this time it is possible to perform an **initial selection and dissemination in the public open data system** (at the e-Governance Centre or NBS) **of the indicators resulting** from statistics and policy documents (strategies), which coincide or are similar to those of SDG, including by specifying the main institutions responsible for the monitoring activity.

4.2. Collaboration opportunities and partnerships

244. The development partners are of great importance for the social and economic progress of Moldova, with whom and by means of which, **the sustainable development stakeholders of the country can improve and strengthen the evidence-based decision-making process**, by generating programmes which focus on the developing the institutional capacity of civil society, academia and the private sector, on developing joint and/or mixed partnerships and on encouraging collaboration for data revolution in Moldova.

245. The information and awareness process must continue and should involve the sustainable development stakeholders. During the SDG localization actions it is necessary for all the **data communities to be involved, to be aware and play a role in the data revolution**. An **official engagement** (see the international examples[78]) by means of which the stakeholders would be involved in data revolution, can support the SDG implementation and can monitor their progress in Moldova. **The involvement of the partners** (academia, the private sector, local public administration, and civil society) in the process of being aware of the sustainable development objectives and in the establishment of partnerships for progress implementation, monitoring and evaluation is a mandatory prerequisite in order to avoid the situations which were acknowledged regarding MDG.

246. The initial actions regarding the partnerships in this field can include introducing in the secondary and tertiary curricula of **trainings regarding the practical utilization of data**, as well as introducing ongoing vocational trainings for civil servants (at the level of the Academy of Public Administration) for upskilling in the field of processing and using statistical data, with the support of and in a direct partnership with the producers of data (NBS, other ministries, NBM).

247. At the same time, it is desirable for the public administration to establish certain **partnerships** with the private sector, civil society, the chambers of commerce and industry, analytic groups (think-tank), IT&C companies and e-Governance Centre, NBS, ministries, **in**

[78] Africa Data Consensus, http://www.uneca.org/sites/default/files/PageAttachments/final_adc_-_english_1.pdf , Indonesia and the Data Revolution for Development, http://www.thejakartapost.com/news/2016/03/21/indonesia-and-data-revolution-development.html

order to innovate and generate joint solutions for specific data reporting and processing situations and in order to support at national level the data revolution and the 2030 agenda.

248. For **local development** it is also important to involve and include local authorities in the activity of collecting and reporting data at the local level, in order to **diversify the dissemination routes and modalities** (online data banks, interactive maps, infographics which facilitate the way in which the data are viewed and understood), **as well as in order to use the data to substantiate the future decisions.**

249. It should be stated again that before anything it is mandatory to have an **awareness and accountability action at the level of the management of the country** (President, Parliament, and the Government) regarding the importance and utility of anchoring the country's development objectives to the SDG, in order to ensure the stability and coherence of the sustainable development process.

4.3. Following steps in data revolution

250. The most recent period (September 2015 - May 2016) was characterized by the intense promotion and dissemination of information regarding the 2030 Sustainable Development Agenda and the SDG which were made known to a large category of stakeholders involved in the development of Moldovan society. This information process is a defining one needed to continue the localization and awareness actions regarding the importance of SDG and to establish the collaboration mechanisms and involvement during their implementation, monitoring and evaluation.

251. The process of mapping out the data ecosystems is only the predecessor of SDG localization in Moldova, and the stakeholders which were involved in the mapping process by providing answers to the surveys, during the workshops (listed in Annex 4) can support the steps which have to be undertaken in data revolution, within a process which is coordinated and undertaken by them. The steps that should be taken are classified in accordance with several areas of intervention:

Institutionalization

- The process of the SDG being undertaken by the stakeholders and of institutionalization of the localization process; Developing an official, institutionalized framework for promoting and knowing the SDG at national and local level, accessible to all the stakeholders and coordinated by the State Chancellery and supporting mass-media campaigns regarding SDG and the monitoring indicators
- Revising GD no. 33 of 2007[79], GD no.176 of March 22, 2011[80], for coordination in the strategic planning and decision making process, regarding the introduction of SDG targets as benchmark for the national strategic objectives and considering the SDG indicators as recommendations for monitoring and evaluating the national strategies;
- Organizing a process so that NBS would identify with the support of the partners and of the Government the potential candidates for establishing innovation development partnerships in the field of statistics, based on their potential (private sector and academia, civil society);
- Motivating the producers and holders of alternative data sources from the private sector, civil society organizations by: I) establishing new partnerships, I) granting

[79] GD no. 55 of January 11, 2007 on the rules of developing and unified requirements for the policy documents
[80] GD no. 176 of 22.03.2011 on approving the Methodology for developing the strategic development programs of the central public administration's authorities

IT&C assistance or financial support for the production, accumulation or utilization of alternative data sources; IV) granting taxation facilities to the private sector using innovative solutions in order to produce alternative data sources;

- Programming certain financial resources that would be allocated to the data revolution process in Moldova, with specific density in order to attract and motivate the private sector, civil society, non-traditional data producers;
- Providing grants for innovative solutions for the production or utilization of SDG relevant data;

Policies and Standards

- Developing a six-month Action Plan in order to revise the national strategies, starting with the 2020 Moldova Strategy, in order to align it to SDG;
- The State Chancellery should have an engagement regarding transparency and should collaborate with the stakeholders, in order to develop certain working models for the production of data, which would allow for the possibility of evaluating the implementation of SDG in Moldova and of other national or local objectives.
- Approving and implementing the 2016-2020 Strategy for Developing the National Statistical System, by ensuring the financial resources for all the measures foreseen in the first 3 years of implementation (revised regulatory framework, implemented quality standards, IT&C and developed innovation; certifying new producers of data; statistical education, etc.);
- Simulating within a number of pilot projects the process of evaluating the impact of policies, by using the SDG indicators and by designing the policies with the support of all the stakeholders involved in the pilot fields (e.g., education, environment, economic, administration);
- Establishing by means of normative acts, the possibility of collaborating for the Data Revolution by means of engagements/contracts with the private sector in order to use the IT applications which are necessary for the production of statistics which are their property, under a public-private partnership (franchise, construction-operation-transfer);
- Establishing pricing mechanisms for the statistical data utilized by the user (the private operator will recover its investment from the price paid by the users in order to view and use the statistical data/catalogues validated by the official producers of statistical data).
- Adopting and implementing NUTS (Nomenclature of Territorial Units for Statistics) in Moldova for the compatibility of data with the standards of European statistics, as well as taking it over/transposing it in the process of implementing the future reform of the public administration and in the administrative-territorial reform.
- Facilitating the use of alternative data sources within the data revolution process, a more active involvement of other potential producers or holders of non-traditional (alternative) data sources, especially the private sector (e.g., financial institutions, telecommunications operators, electricity, heat and water suppliers, etc.), which hold a large range of data which at present are not being capitalized within the process of data production and utilization.
- Using the traditional and alternative data sources which can be obtained faster and with less financial and human effort etc., for impact assessments, for preventing and avoiding economic crises and unwanted phenomena.

Infrastructure and capital investments

- Financially stimulating the partnerships between the private-public-academic sector in order to increase the utilization of the capacities of the local IT companies during the implementation of innovative applications for collecting, processing and efficiently analyzing the already existing data – automation of the process of working with data (electronic chip, Bar code, QR code, smart meters-SMART GRID etc.);
- Ensuring access to broadband in all the rural areas, for all the public institutions and organizations of the civil society and private sector;
- Developing an inventory of the IT&C infrastructure and the IT applications for e-education, social assistance, health, agriculture, environment, justice, fiscal, etc. in order to evaluate their capacity to answer to data revolution;
- Establishing certain programmes of investments in the infrastructure necessary for statistics at the level of all the ministries and public agencies (in accordance with the 2016-2020 SDNSS);
- Implementing investment projects in the IT&C infrastructure together with the communications operators and the private sector.

Data using platforms

- Approving a single monitoring and evaluation framework, correlated with SDG for Moldova, based on good international practices and full evaluation frameworks with definition libraries, taxonomies, metrics and implementation guidelines;
- Positioning the data in standard and reusable formats, in accordance with the methodologies agreed upon with NBS, on already operational instruments (e.g., the open data portal);
- Increasing the utilization of the Government's interoperability platform and eliminating the situations of delaying the connection of the public institutions to this platform;
- Development and implementation of the Semantic Catalogues in order to ensure interoperability of data on the platforms of the Electronic Governance Centre;
- Establishing a national framework/single platform for collecting/analysing data, (including unification of the nomenclatures, coding of indicators, unification of the methods for calculating the indicators);
- Developing a national platform with a dashboard, regarding the monitoring indicators for the national strategies, including SDG, and making it available to the general public for information and feedback purposes;

Promotion and training

- Supporting workshops, with the participation of the stakeholders, in order to agree on the method for collecting and producing the data necessary for monitoring; organizing annual conferences regarding the accomplishment of SDG
- Funding a state research programme related to the Sustainable Development Goals;
- Focusing on applied research-development projects on topics, financed from public funds, which would contribute to reaching the SDG and their indicators.

- Organizing competitions in order to promote innovating solutions for using data from different sources (including social media for monitoring SDG), and integrating them in the event of validating the official flows of data utilized in order to monitor and evaluate the public policies;
- Introducing in the curricula of the primary and secondary educational cycles of the new school year, certain topics regarding sustainable development, the role and importance of communication and of data in the evolution of society;
- Establishing a partnership between the State Chancellery, other public institutions and the Academy for Public Administration and other relevant educational establishments, in order to develop educational programmes in the field of statistics (for those that hold data, and especially for the users of data) for the faculties that train specialists in the field of public administration (and other similar topics);

For a successful data revolution it is important for the stakeholders to also be aware of the list of recommendations issued under the aegis of the UN Secretary General "Data supporting the post-2015 development agenda: Data Revolution."[81]

All these actions must be promoted and debated within workshops which focus on the localization of SDG and can be applied immediately, so that all the stakeholders would have the opportunity to be involved in the implementation with ideas on how to improve them, by defining actual partnerships based on actions, with a commitment to the provision of resources and with accountability for the results expected in the data revolution.

252.

[81] The Report of the UN Secretary- General "A new global partnership: eradicate poverty and transform economies through sustainable development", the High-level Panel of Eminent Persons on the Post-2015 Development Agenda called for a "data revolution". Statistical Commission Forty-sixth session 3-6 March 2015; http://unstats.un.org/unsd/statcom/doc15/2015-3-EmergingIssues-E.pdf, E/CN.3/2015/3

Annexes

Annex 1 - Documents studied

Official documents

Strategies, action plans

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Annex 2 - Stakeholders of Data Revolution

List of organizations that filled in the questionnaire "DATA REVOLUTION" MAPPING IN THE REPUBLIC OF MOLDOVA during March 16 – April 5 2016

Nr.	*Organisation*	*Respondent name and position*	*Contact information*
Central Public Authorities			
1.	Parliament Secretariat	Vasile Rusu Senior consultant Parliamentary Studies and Research Department	basil_russu@hotmail.com vasile.rusu@parlament.md 022 268 110, 079674995
2.	E-Government Center	Livia Turcanu Platforms and products consultant	livia.turcanu@egov.md 0 22 250 234
Ministries			
3.	Ministry of Economy	Popov Artiom Senior specialist	artiom.popov@mec.gov.md 0 22 250 671
4.	Ministry of Finance	Bălan Nadejda e-Transformation specialist	nadejda.balan@mf.gov.md 0 22 262 666, 078684510
5.	Ministry of Internal Affairs	Dorin Pascari Senior specialist, IT service	dorin.pascari@maigov.md 0 22 255 258, 069032635, 062102221
6.	Ministry of Foreign Affairs	Precup Alexandru Internal auditor	alexandru.precup@mfa.md 0 22 578 325
7.	Ministry of Defense	Angelica Saban IT service	angelica.saban2@army.md 0 22 252 328
8.	Ministry of Regional Development and Construction	Evtodienco Violeta Head of department	violeta.evtodienco@mdrc.gov.md 0 22 240 551
9.	Ministry of Transports and Road Infrastructure	Maria Dastic e-Transformation service	etransformare@mtid.gov.md 0 22 820 737, 068435339
10.	Ministry of Environment	Veronica Lopotenco Senior consultant, Department of Environmental Policy, Monitoring and Strategic Planning	lopotenco@mediu.gov.md 0 22 204 521
11.	Ministry of Education	Inga Crucirescu Senior Consultant, e-Transformation department	inga.crucirescu@edu.md 0 22 233 220
12.	Ministry of Culture	Andrei Rodideal e-Transformation service	andrei.rodideal@mc.gov.md 0 22 210 773, 067441720, 069093786
13.	Ministry of Labour, Social Protection and Family	Veveriţa Andrei Deputy Chief, e-Transformation service	andrei.veverita@mmpsf.gov.md 022 269 655, 0 22 269 393
14.	Ministry of Health	Sergiu Ungureanu Head of e-Transformation service	sergiu.ungureanu@ms.gov.md 0 22 268 805
15.	Ministry of Information Technologies and Communications	Eleonora Vasilachi Chief, Division for Policy Analysis, Monitoring and Evaluation	eleonora.vasilachi@mtic.gov.md 0 22 251 153
16.	Ministry of Youth and Sport	Ludmila Codreanu Chief, Division for Policy Analysis, Monitoring and Evaluation	ludmila.codreanu@mts.gov.md 0 22 820 868

Nr.	Organisation	Respondent name and position	Contact information
Central administrative and regulatory institutions			
17.	Bureau for migration and asylum	Jana Mazur	jana.mazur@bma.gov.md
18.	Interethnic Relations Bureau	Ababii Alexei Senior Specialist, International relations and European Integration department	dried@bri.gov.md 069333792
19.	Tourism Agency	Petru Tarlev Regulatory and Quality Control Department	petru.tarlev@turism.gov.md 0 22 286 404
20.	Medicines and Medical Devices Agency	Andrei Harea	andrei.harea@amed.md 0 22 884 326
21.	National Regulatory Agency for Electronic Communications and Information Technology	Valeriu Madan Head of IT service	valeriu.madan@anrceti.md 0 22 251 313, 0 22 284 387
22.	Agency „Apele Moldovei" (Moldova's Waters)	Liuba Secăreanu Head, Department of Cadastre, Directorate of Water Resources Management	liuba.secareanu@gmail.com liuba.secareanu@apele.gov.md 0 22 280 794, 0 22 280 700, 060600531
23.	Agency for Land Relations and Cadastre of the Republic of Moldova	Ovdii Maria Head of the Geodesy, Cartography and Geoinformatics department	maria.ovdii@arfc.gov.md 0 22 881 270
24.	Energy Efficiency Agency	Magdîl Nicolae Senior specialist	nicolae.magdil@aee.md 069864701
25.	State Agency for Intellectual Property	Profire Petru Head of DMI	petru.profire@agepi.gov.md 0 22 400 642
26.	Agency for Geology and Mineral Resources	Iurciuc Boris Head, Department of State Fund of subsoil information	geofond@agrm.gov.md agrm@agrm.md 0 22 750 636
27.	Public Procurement Agency	Natalia Postolache	natalia.postolache@tender.gov.md 0 22 243 384
28.	National Employment Agency	Camerzan Andrei Head of department	andrei.camerzan@anofm.md 0 22 227 804
29.	National Auto Transport Agency	Nestor Bejenari Head of IT service	sef.ti@anta.gov.md bejenari@nestor.md 0 22 497 514
30.	Academy of Sciences of Moldova	Igor Serotilă Head of HR department	igor.serotila@gmail.com 079971008
31.	Civil Protection and Emergency Situations Service	Alexandr Peancovschii Senior specialist, Database management service	it@dse.md, a.peancovschii@mail.ru 069702468
32.	Civil Status Service	Svetlana Ilescu Head of IS department	ilescu.svetlana@ssc.gov.md 0 22 257 109
33.	State Hydrometeorological Service	Violeta Balan Head, Center for Atmospheric Air Quality and Environmental Radioactivity Monitoring	violeta.balan@meteo.gov.md 0 22 762 566
34.	Fishery service	Ghenciu Petru, Head of HR department	sp@sp.gov.md 022 472 420
35.	Information service of the Financial Reports of NBS	Crăciun Andrei Head	andrei.craciun@statistica.md 0 22 999 131

Nr.	*Organisation*	*Respondent name and position*	*Contact information*
36.	National Council for Accreditation and Attestation	Marina Piscenco Consultant, Directorate of Evaluation and Accreditation	marina.piscenco@mail.ru 0 22 294 626
37.	Coordinating Council of Audiovisual	Evghenii Stepanov Foreign Relations Department	office@cca.md
38.	National Bank of Moldova	Ion Veveriţa Director, Reports and Statistics Department	ion.veverita@bnm.md 0 22 409 024, 060668877
39.	National Commission for Financial Markets	Pui Elena Director general direction	elena.pui@cnfp.md 0 22 859571
40.	State Tax Service of the Republic of Moldova	Constantin Untilă Deputy Head, Monitoring and Information Development	constantin.untila@fisc.md 069459968, 022 823366
41.	State Inspectorate of Geodesic, Technical and Regime Supervision	Stratulat Vasile Senior inspector	vstratulat@gmail.com 0 22 881 209
42.	National Office of Social Insurance	Elena Nazarco	elena.nazarco@cnas.gov.md 0 22 257 583
43.	National Medical Insurance Company	Creciun Sergiu Coordinating specialist	sergiu.creciun@cnam.gov.md 0 22 225 718
44.	Licensing Chamber of the Ministry of Economy	Apostolov Valentina Head, Deartment of Licensing information management	valentina.apostolov@licentiere.gov.ms 0 22 820 760
45.	National Center of Public Health	Puris Vitalie	vitaliesti@cnsp.md 069715883
46.	National Center for Health Management	Barba Oleg Deputy director	centru.management@ms.md 0 22 727 386
Public order systems			
47.	Department of Penitentiary Institutions	Sergiu Prodan	sergiu.prodan@penitenciar.gov.md 0 22 409 830
48.	Border Police Department	Tatiana Catană It service	tatiana.catana@border.gov.md 0 22 259 727
State enterprises			
49.	S.E. " National Centre for Radio Frequencies"	Spataru Ovidiu Technical director	ospataru@cnfr.md 0 22 727 279, 068222959
50.	S.E. "MoldData"	Carpovici Stela Quality engineer	s.carpovici@molddata.md 069724436
51.	S.E. "Center for State Information Resources "Registru""	Valentina Albu Engineer	valentina.albu@registru.md 0 22 504 354
52.	S.E. " Special Telecommunications Center "	Şova Andrian Head of the customer support	andrian.sova@cts.md 0 22 820 966
53.	S.E. "Information Society Development Institute"	Igor Cojocaru Director	Igor.cojocaru@idsi.md 0 22 289 840
54.	S.E. " Agricultural Information Centre "	Radu Grecu Main specialist in data analysis	radu.grecu@cia.md 069033988
55.	S.E. " Radiocommunications "	Iurie Demciuc Head of Technical Department	iurie.demciuc@radiocom.md 0 22 876 460
56.	S.E. "Posta Moldovei"	Mihail Butnari Head of IT department	mihail.butnari@posta.md 022 251 259, 069308960, 079924015

Nr.	*Organisation*	*Respondent name and position*	*Contact information*
57.	S.E. Cadastre	Nanu Diana	diana.nanu@isc.cadastru.md
58.	S.E. Institute of Geodesy, Technical research and Cadastre	Igor Paharikov Head, Department of Geographic Information Systems	igor_paharikov@ingeocad.md
59.	S.E. "Fiscservinform"	Lidia Baragan Head, Analysis and reports service	lidia.baragan@fsi.fisc.md 022-822016
60.	SA Moldtelecom	Sergiu Tiu Head of Information Security service	sergiu.tiu@moldtelecom.md 0 22 570 155
Academia, universities			
61.	Agency for Innovation and Technology Transfer	Dorin Ciuntu Coordinating specialist, TT Department	ciuntu.aitt@gmail.com 0 22 882 569
62.	Agricultural Sciences Section of the Academy of Sciences of Moldova	Tudorache Gheorghe Scientific secretary	ssagricola@rambler.ru 0 22 210 502
63.	Institute of Genetics, Physiology and Plant Protection, Academy of Sciences	Andronic Larisa Deputy Director	andronic.larisa@uahoo.com 0 22 660 409
64.	Institute of Ecology and Geography, Academy of Sciences	Castraveţ Tudor Researcher	tcastravet@gmail.com 067148788
65.	Institute of Microbiology and Biotechnology, Academy of Sciences	Rudic Valeriu Director	microbiotech@imb.asm.md 022 725 754
66.	Institute of Geology and Seismology, Academy of Sciences	Nicoară Igor Deputy directir	nicoaraigor@gmail.com 0 22 739 081
67.	Institute of Chemistry, Academy of Sciences	Cocu Maria Scientific secretary	ichem@asm.md 0 22 739 963
68.	Botanical Garden, Academy of Sciences	Roşca Ion Director-adjunct ştiinţa	i.roscasilva@gmail.com 069214646
69.	Power Engineering Institute, Academy of Sciences	Tîrşu Mihai Director	tirsu.mihai@gmail.com 0 22 735 386
70.	National Economic Research Institute of the Academy of Sciences	Stratan Alexandru Director	alex_stratan@yahoo.com 0 22 501 100
71.	Institute of Mathematics and Computer Science of ASM	Elvira Naval Scientific secretary	elvira.naval@gmail.com, elvira.naval@math.md 0 22 738 041
72.	Institute of Applied Physics, ASM	Ciornea Viorel Deputy Director	viorel@phys.asm.md 079971244
73.	Institute of Zoology, ASM	Tiron Stefan International Relations coordinating specialist	stefandtiron@gmail.com 0 22 739 896
74.	Institute of Philology of ASM, Terminology Centre	Mincu Eugenia Senior researcher	jana_mincu@yahoo.fr 060504467
75.	Institute of Pedology, Agrochemistry adn soilprotection "N.Dimo"	Moşoi Iurie Director	mosiur@mail.ru 069152799
76.	Institute of Emergency Medicine	Vovc Liviu Head of Department Medical Services Quality Management	liviu.vovc@gmail.com 0 22 250 702

Nr.	*Organisation*	*Respondent name and position*	*Contact information*
77.	IMSP Mother and Child Institute	Revenco Neli Deputy Director	neli_revenco@hotmail.com 068889926
78.	RENAM	Petru Bogatencov Chief of Managment Board	bogatenc@asm.md 0 22 288 006
79.	State University of Moldova	Ţurcan Nelly Assoc. professor	tsurcannelly@gmail.com 0 22 577 602
80.	State Agricultural University of Moldova	Mihail Cuşnir Head of computer center	fax@uasm.md, m@uasm.md 0 22 312 280
81.	University of European Studies of Moldova	Turcan Aurelia Vice-rector	aurelia-turcan@mail.ru 069255595
82.	Academy of the Ministry of Internal Affairs "Ştefan cel Mare"	Bulai Iurie Assoc. professor	bulai.iurie@mail.ru 079701176
83.	Technical University of Moldova	Chirsanova Aurica Director of Francophone Branch "Technologies Alimentaires"	chirsanova.aurica@gmail.com +37379770751
Privare comanies			
84.	ProCredit Bank	Frecăuţan Alexandru Database Administrator	alexandr.frecautan@gmail.com 069544375
85.	BC Comert Bank SA	Buzu Iulian Head of service	iubuzu@comertbank.md 0 22 839 773
86.	Moldindconbank	Gennadii Toporevskyi DTI Deputy Director	gennadii.toporevskyi@micb.md 0 22 576 894, 069112779
87.	Î.C.S."Red Union Fenosa" S.A.	Serhii Harhai ICT manager	sharhai@ufmoldova.com 062161401
88.	SA Orange Moldova	Zinaida Chercheja Knowledge Management & Training Manager	zinaida.chercheja@orange.md 069198537
Civil society, consulting companies			
89.	Centre for Sociological and Marketing Research “CBS-Axa”	Vasile Cantarji Development manager	vasile.cantarji@yahoo.com 0 22 203 464
90.	Business Intelligence Service	Ceban Roman legal expert	roman.ceban@bis.md 0 22 278 701
91.	Institute for Public Policy	Gremalschi Anatol Programmme director	Anatol_Gremalschi@ipp.md 0 22 276 785
92.	National Library of Moldova	Popa Valentina Head of Biblioteconomy Research and Development Center	cscd@bnrm.md 0 22 240 070
93.	Municipal Library B.P.Haşdeu	Mariana Harjevschi Director	mharjevschi@gmail.com 0 22 223 360
94.	AO "Altruism"/ Suicide Prevention Hotline	Liuba Ceban President	liuba.ceban@gmail.com 060806623
95.	APDI Humanitas	Cociurca Petru Secretary	cociurca@petya.ru 069331208
96.	Chamber of Commerce and Industry	Scortescu Eugeniu Head of Marketing Information Center	marketing@chamber.md 022 241 480
Development partners			
97.	UNICEF	Elena Laur	elaur@unicef.org 069628792

Nr.	*Organisation*	*Respondent name and position*	*Contact information*
98.	UN Women	Lucretia Ciurea M&E Specialist	lucretia.ciurea@unwomen.org 0 22 839936, 069226083
99.	UNFPA	Eduard Mihalaş Programme Analyst	mihalas@unfpa.org 069807692
100.	USAID	Lucia Martinenco	lmartinenco@usaid.gov
101.	IREX Moldova, Novateca program	Maister Artiom Impact Specialist	amaister@irex.org 068938389
Local Public Authorities			
102.	District Council Orhei	Sîrbu Eugeniu PR senior specialist	eugen.sirbu@gmail.com 069215808
103.	District Council Nisporeni	Mînăscurtă Oxana Head of economy department	achizitii.crnisporeni@gmail.com 0 264 23796
104.	District Council Căuşeni	Burac Tudor Senior specialist, Local public administration department	buracpc@gmail.com 068135138
105.	Consiliu Raional Glodeni	Turetcaia Olesea Head of public administration department	oturetcaia@mail.ru 0 249 23777
106.	Chisinau City Hall	Manjos Cristina Senior specialist	cristina.garaba@pmc.md 0 22 201 544
107.	Department for local taxes collection of Chisinau City Hall	Gasnas Gheorghe Head of department	impozite@pmc.md 0 22 990 997
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110.	District Council Hânceşti	Tasca Dorian Secretary	secretar@hincesti.md 0 269 22048
111.	District Council Sângerei	Serbuşca Vera Head of Economy department	vserbusca@mail.ru 0 262 23285
112.	District Council Edineţ	Beleacov Liliana PR specialist	econsiliu@mail.md 0 246 22982
113.	District Council Făleşti	Mărgineanu Oxana Secretary	omargineanu@mail.ru 0 259 22057
114.	District Council Ungheni	Ciobanu Tatiana Senior specialist, Local public administration department	tciobanu@inbox.ru 0 236 22726
115.	District Council Criuleni	Ciorba Petru Senior specialist	ciorba.petru1992@gmail.com 0 248 22444, 060034185
116.	District Council Leova	Topală Tatiana Internal auditor	tatiana.hasan@mail.ru 0 263 2 45 24
117.	District Council Anenii Noi	Ciur Dumitru Jurist	dciur@mail.ru
118.	District Council Ialoveni	Viorica Podubnîi Head of Economy department	podubniiviorika@yahoo.com 078093350

Annex 3 - Questionnaire on Data Revolution

SURVEY
„DATA REVOLUTION" MAPPING IN MOLDOVA

At a UN Summit (25-27 September 2015), Member States of the United Nations adopted The 2030 Agenda for Sustainable Development with a set of Sustainable Development Goals (SDGs) at its core. The United Nations Secretary General's High-level Panel on the Post-2015 Development Agenda called for more evidence-based development policy-making and implementation bolstered by enhanced capacity for statistical production, better availability of quality data and statistics and strengthened accountability of development stakeholders, or so-called "Data Revolution for Sustainable development".

The need for strengthening of statistics and data revolution, through exploring of new technologies and innovative approaches with the support of and expertise of academia, private sector and civil society, are among the critical elements of the post-2015 framework..

In this regard, the United Nations Development Programme (UNDP) has initiated a mapping / inventory of the data system in Moldova, necessary for measuring the progress toeards sustainable development. Because data revolution can be performed by the actors who have responsibilities with regards to data (called "data community") and who interact with each other through various institutions, enabled by the legal and policy framework and the use of innovative technologies, thus creating a " data ecosystem", we kindly invite You to fill in the survey below. It aims to assess the availability of data and institutional modernization capabilities needed for the implementation of the Post-2015 Development Agenda.

The survey has 33 questions grouped into 7 parts. The total duration shall not exceed 30 minutes and your answers will be used exclusively within the initiative "DATA REVOLUTION" MAPPING IN MOLDOVA.

Comleted surveys (printed or in Word format) shall be sent to DataRevolutionMD@idsi.md or DataRevolutionMD@gmail.com, or filled in online at: http://idsi.md/DataRevolutionMD

Thank you in advance for your time to support Moldova in identifying its data communities needed to measure the progress of sustainable development over the next 15 years.

Part 1: GENERAL INFORMATION

1. **I Specify the name and website of your organization / institution**

*Name	
Web page	www.

*Mandatory

2. **The contact details of the person responsible for filling out the questionnaire** *(position, telephone, e-mail address).*

* Name, surname		*Telephone	
Position		*E-mail	

*Mandatory

3. **Specify the activity sector of your organization / institution** *(Specify the applicable option):*

- (•) Central public authority
- ( ) Local public authority
- ( ) Civil society organization
- ( ) Academia / research institute
- ( ) Consultancy company
- ( ) Enterprise (public or private), financial institution
- ( ) International institution, development partner, donor
- ( ) Mass-media
- ( ) Other (specify)

Part 2: INSTITUTIONAL ENGAGEMENT REGARDING DATA PRODUCTION/USAGE

4. **How would you characterize the involvement (role) of your organization / institution with regards to data and statistical information** *(check only one option per row):*

	Main role *(check only one option)*	**Secondary role** *(check only one option)*
Producer	( )	( )
Data holder	( )	( )
User ((data analysis for a particular purpose)	( )	( )
Infomediary (retrieving data for general information)	( )	( )
Funder / development partner	( )	( )

5. **What types of data is using your organization / institution? Evaluate the quality of these sources on a scale from 1-5, where 1 means the lowest quality, and 5 - the highest** *(check one option per row):*

Data type	**Doesn't use data**	**1**	**2**	**3**	**4**	**5**
Official data (by public authorities)	( )	( )	( )	( )	( )	( )
Unofficial data (case studies, independent researches, expert opinion, etc.)	( )	( )	( )	( )	( )	( )
Data from external sources (World Bank, World Health Organization, International	( )	( )	( )	( )	( )	( )

Monetary Fund etc.)						

6. **For what purpose does your organization / institution produce or using you this data as producer and / or user?** *(check all that apply)*

	Data producer	Data user
Informing the general public	☐	☐
Policy, strategic framework development	☐	☐
Monitoring, evaluation, impact assessment	☐	☐
Market research	☐	☐
Develops product / analytical reports	☐	☐
On request for a fee	☐	☐
Others	☐	☐

7. **What obstacles faces your organization / institution in obtaining data, including from other sources?** *(check one option per row)*

Obstacles	Yes	No
Refusal to provide data	○	○
Services are for a fee	○	○
Data format is inappropriate	○	○
Lack of particular data and statistical information	○	○
Lack of data disaggregated by certain criteria	○	○
Inappropriate period of data availability	○	○
Inappropriate periodicity and frequency of data	○	○
Others (specify)		

8. **How are financed the activities related to production and / or use of data in your organization / institution?** (check all that apply)

Public funds	☐
Own financial means, including for a fee	☐
Donations / grants / assistance projects	☐

9. **In which of the specified areas your organization / institution produces and / or uses data?** *(check all that apply)*

SDGs Domain	*Subdomains*	*Possess and / or produce data for the indicated subdomains*	*Use data for analyzing the specified subdomains*
1. End poverty in all its forms everywhere	Reducing extreme and absolute poverty	☐	☐
	Social protection	☐	☐
	Equal rights to property, economic, natural resources etc.	☐	☐
	Economic, environmental, political, etc. crises	☐	☐
2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture	Food security	☐	☐
	Providing nutrition for children, pregnant women, adolescents	☐	☐
	Development of small producers in agrifood, ensuring access to land resources, knowledge, sales market, etc.	☐	☐
	Modern and sustainable agricultural practices	☐	☐
3. Ensure healthy lives and promote well-being for all at all ages	Maternal and infant mortality	☐	☐
	Morbidity and mortality by communicable diseases, HIV, tuberculosis, hepatitis etc..	☐	☐
	Drug, alcohol abuse	☐	☐
	Deaths and injuries caused by road accidents	☐	☐
	Access to sexual health services and reproductive health services	☐	☐
	Coverage with basic health services, financial protection, safe, quality and affordable health services	☐	☐
	Deaths and injuries caused by air, water and soil pollution	☐	☐
4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Ensuring compulsory primary and general education	☐	☐
	Early childhood development, access to preschool education	☐	☐
	Access to quality vocational, technical and tertiary education	☐	☐
	Eradicating gender disparities in education and ensuring equal access to all levels of education	☐	☐
	Literacy, numeracy	☐	☐
	Knowledge and skills to promote sustainable development	☐	☐
5. Achieve gender equality and empower all women and girls	Eradicating all forms of discrimination against women and girls	☐	☐
	Elimination of violence against women and girls	☐	☐
	Forced and early marriages	☐	☐
	Domestic and unpaid work	☐	☐
	Participation in decision-making in the political, economic and public life	☐	☐

SDGs Domain	*Subdomains*	*Possess and / or produce data for the indicated subdomains*	*Use data for analyzing the specified subdomains*
6. Ensure availability and sustainable management of water and sanitation for all	Universal, equitable access to safe water sources	☐	☐
	Universal, equitable access to sanitation	☐	☐
	Improving water quality, pollution reduction, water treatment, safe recycling	☐	☐
	Efficient use of water, reduction of population suffering from water shortage	☐	☐
	Implementation of integrated water resources management	☐	☐
	Water ecosystem protection and rehabilitation	☐	☐
7 Ensure access to affordable, reliable, sustainable and modern energy for all	Universal, equitable and sustainable access to modern energy sources	☐	☐
	The use of renewable energy sources	☐	☐
	Doubling energy efficiency	☐	☐
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Creşterea economică durabilă	☐	☐
	Economic productivity based on innovation, technology, labor-intensive sectors	☐	☐
	Policies oriented towards productive activities, decent job creation, entrepreneurship, innovation, access to financial services	☐	☐
	Employment and decent work for all, equal pay for equal work	☐	☐
	Young people outside the labor market, education and continuous training	☐	☐
	Forced labor, trafficking in persons, child labor	☐	☐
	Right to work, safe working conditions	☐	☐
	Promoting sustainable tourism in the context of job creation, cultural values and tourist products	☐	☐
	The ability of financial institutions to increase access to banking, insurance and funding	☐	☐
9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Quality, sustainable infrastructure, available including at regional and cross-border level for economic development and welfare	☐	☐
	Sustainable and inclusive industry, employment in the industrial sector	☐	☐
	The access of SMEs in industry and other sectors to financial services	☐	☐
	Efficient, environmentally friendly, non-invasive infrastructure and processes	☐	☐

SDGs Domain	*Subdomains*	*Possess and / or produce data for the indicated subdomains*	*Use data for analyzing the specified subdomains*
	Research, development and innovation, including in the industry	☐	☐
10. Reduce inequality within and among countries	Sustainable growth of household incomes of the poorest	☐	☐
	Social, economic and political inclusion for all categories of population	☐	☐
	Discriminatory policies and practices	☐	☐
	Equity by promoting tax policies, salaries and social protection	☐	☐
	Safe and sustainable policies on migration and mobility	☐	☐
11. . Make cities and human settlements inclusive, safe, resilient and sustainable	Safe, affordable housing for all	☐	☐
	Accessible, safe and sustainable transport and roads	☐	☐
	Sustainable and inclusive urban management	☐	☐
	Protection of cultural and natural monuments	☐	☐
	Deaths and injuries in the context of natural and economic disasters	☐	☐
	Urban impact on air pollution, household waste management	☐	☐
	Green and public spaces accessible and safe for all	☐	☐
12 Ensure sustainable consumption and production patterns	Policies and initiatives on responsible consumption and production	☐	☐
	Management and efficient use of natural resources	☐	☐
	Waste / losses of food in trade, production process, including post-harvest	☐	☐
	Environmental management of chemicals and all waste, minimizing their adverse effects on human health and the environment	☐	☐
	Generation of waste by prevention, reduction, recycling and reuse	☐	☐
	Encouraging companies to adopt sustainable practices and integration of information in the reporting cycle	☐	☐

SDGs Domain	*Subdomains*	*Possess and / or produce data for the indicated subdomains*	*Use data for analyzing the specified subdomains*
	Sustainable procurement practices in accordance with national policies and priorities	☐	☐
	Information and awareness on sustainable development and a lifestyle in harmony with nature	☐	☐
13. Take urgent action to combat climate change and its impacts	Capacity to adapt to climate-related risks and natural disasters	☐	☐
	Integrating climate change into policies, strategies and national plans	☐	☐
	Education, awareness, human and institutional capacity to mitigate climate change, reduce impact	☐	☐
14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development	Regulation of overfishing, illegal and destructive fishing practices and implementation of management plans	☐	☐
15. Protect, restore and promote sustainable use of terrestrial ecosystems	Conservation, restoration and sustainable use of terrestrial freshwater ecosystems	☐	☐
	Implementation of sustainable management of all types of forests, halting deforestation, restoring degraded forests and significantly increasing afforestation and reforestation	☐	☐
	Combating desertification, restoration of land and degraded soils	☐	☐
	Degradation of natural habitats, biodiversity loss	☐	☐
	Utilization of genetic resources and promoting access to these resources	☐	☐
	Poaching and trafficking of protected species of flora and fauna	☐	☐
	Integrating biodiversity and ecosystems into strategic planning at national and local levels	☐	☐
16 Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	Reducing all forms of violence and mortality caused by violence	☐	☐
	Stopping exploitation, trafficking and all forms of violence and torture against children	☐	☐
	Promoting the rule of law and ensuring equal access to justice	☐	☐
	Reducing illegal flows of weapons and financial resources, combating all forms of organized crime	☐	☐
	Reducing all forms of corruption	☐	☐
	Develop effective institutions, accountable and	☐	☐

SDGs Domain	*Subdomains*	*Possess and / or produce data for the indicated subdomains*	*Use data for analyzing the specified subdomains*
	transparent at all levels		
	Needs oriented, inclusive, participatory and representative at all levels decision-making process	☐	☐
	Providing legal identity for all, including birth registration	☐	☐
	Public access to information and protection of fundamental freedoms	☐	☐
17. Strengthen the means of implementation and revitalize the global partnership for sustainable development	Strengthening domestic financial resources, improvement of taxation and tax collection	☐	☐
	Mobilizing additional financial resources from various sources (investment, remittances etc.)	☐	☐
	Long-term debt sustainability, reduction and debt restructuring	☐	☐
	Reforms and national policy on investment promotion	☐	☐
	Strengthening regional and international cooperation on access to science, technology and innovation, knowledge exchange	☐	☐
	Development, transfer, diffusion of environmentally friendly technologies	☐	☐
	Internet use by population	☐	☐
	Export promotion	☐	☐
	Facilitating sustainable and preferential access to foreign market	☐	☐
	Increasing macroeconomic stability, including through policy coordination and coherence	☐	☐
	Strengthening national capacities on the production of statistical indicators on sustainable development according to the disaggregation criteria relevant to each target, in accordance with the fundamental principles of official statistics	☐	☐

Part 3. LEADER ROLES

10. In your opinion, which institution is the nationwide leader in the following areas:

Area	**Leader institutions**
1. Data production	
2. Use of data for the development and monitoring of policies,	

strategies, programs

3. Promotion of modern technologies of collection, production, exchange and access to data

4. Promotion of modern technologies for visualization and data analysis

11. Does the management of your organization / institution promote production and / or use of the following data types in the organization / institution activity? *(check one option per row)*

Data types	Yes	No	Don't know
Statistical data	○	○	○
Data from administrative sources / registries	○	○	○
Sociological surveys, interviews, focus groups	○	○	○
Internal records of the organization / company	○	○	○
Own estimates / calculations	○	○	○
Open data	○	○	○
Data collected through innovative methods (Big Data including sms, real time data, semantic analysis of social media, etc.)	○	○	○
Others (specify)			

12. Does the management of your organization / institution request and / or use data visualization tools (maps, infographics, databases, etc.) in the organization / institution activity? *(Check one option per row)*

Visualization tools	Yes	No	Don't know
Maps, including animated ones	○	○	○
infographics	○	○	○
Online databases	○	○	○
Othes (specify)			

Part 4. LEGAL FRAMEWORK

13. **In your opinion are there national regulatory and coordinating mechanisms concerning the following data aspects:** *(check one option per row)*

Data aspects	Yes	No	Don't know
Developing, monitoring and evaluation of evidence / data -based policies	○	○	○
Statistical norms and standards	○	○	○
Data exchange, interoperability	○	○	○
Data Access	○	○	○
Data Protection	○	○	○
ICT infrastructure	○	○	○

14. **Is your organization / institution holding mandate for the following activities?** *(check all that apply in each row)*

Activities	Yes, select			Other (statute, regulation, etc.)	Has no mandate
	Law	Government Decision	Regulation, internal order		
Data collection	☐	☐	☐	☐	☐
Data production	☐	☐	☐	☐	☐
Data dissemination	☐	☐	☐	☐	☐
Policy development, monitoring and evaluation	☐	☐	☐	☐	☐
Access to data	☐	☐	☐	☐	☐
Promoting ICT for the production and use of data	☐	☐	☐	☐	☐

15. **Specify obstacles, limitations of the legal / regulatory framework of your organization / institution referring to production and / or use of data?** *(Check one option per row)*

Obstacles, limitations of the legal / regulatory framework	*Yes*	*No*
Incomplete legal / regulatory framework	○	○

Legal / regulatory framework with conflicting provisions	○	○
Lack the legal / regulatory framework	○	○

Part 5. INSTITUTIONAL CAPACITIES

16. **Within your organization / institution is there a subdivision / department responsible for at least one data management activities (collection, processing, storage, dissemination, analysis)?**

○ Yes

○ No

○ Don't know

17. **Are there function within your organization / institution for the following occupations (***check one option per row):*

Position	Yes	Nr of positions	No
Interview operator	○		○
Data operator (data entry)	○		○
Network and / or web page administrator	○		○
Programmer	○		○
Statistician	○		○
Data analyst	○		○

18. **To what extent your organization / institution receives training / education in the following areas:** *(check one option per row)*

Area	At least once a year	Occasionally, every few years	Has not received
18.a. Top and middle leadership			
Data collection / production	○	○	○
Defining, calculating statistical indicators	○	○	○
Analysis and presentation of data	○	○	○
Policy development, monitoring	○	○	○
ICT	○	○	○

18.b. Employees			
Data collection / production	○	○	○
Defining, calculating statistical indicators	○	○	○
Analysis and presentation of data	○	○	○
Policy development, monitoring	○	○	○
ICT	○	○	○

19. **How would you assess the ICT competences / skills of your organization / institution employees? Mark on a scale from 1 to 5, where 1 signifies the lack of skills, and 5 - very good skills.** *(Check one option per row)*

Skills	1	2	3	4	5
Files management	○	○	○	○	○
Text processing (MS Word etc.)	○	○	○	○	○
Spreadsheets (MS Excel etc.)	○	○	○	○	○
Presentation Tools (MS Power Point etc.)	○	○	○	○	○
Internet browsing	○	○	○	○	○
Electronic mail	○	○	○	○	○
Working with databases (MS Access etc.)	○	○	○	○	○
Using specialized software for data analysis (SPSS, Stata etc.)	○	○	○	○	○
Using data visualization software (ArcGIS etc.)	○	○	○	○	○

20. **Within your organization / institution, are there procedures / tools assessing employees' ICT competences / skills (listed above)?**

○ yes

○ No

○ Don't know

21. **Is there an active ICT community of experts, with which your organization / institution interacts to promote innovations in the production and use of data?**

○ Yes, describe the community and interaction

No

Don't know

Part 6: INFRASTRUCTURE

22. Does your organization / institution have technical (equipment) and technology (applications, tools) capacities for data management? *(Check one option per row)*

Steps	Yes	No	Don't know
Collection			
Processing			
Dissemination, Visualization			
Storage			
Analysis			

23. Are the above listed capabilities sufficient for managing large volumes of data (over 1 mln. entries)?

Yes

No

Don't know

24. Does your organization / institution have access to intranet and / or extranet for automatic exchange of data and information, including with other data holders? *(Check one option per row)*

Data exchange types	Yes	No	Don't know
Intranet (within the institution)			
Extranet (among institutions)			

25. Does your organization / institution have a platform / portal or website compartment intended for dissemination of statistical data and information?

Yes, specify the frequency of update.

- daily
- monthly
- quarterly

- anually
- less frequently

- No
- Don't know

26. What are the obstacles or factors affecting access and use of ICT for data processing and analysis by your organization / institution? *(Check one option per row)*

Obstacles	Yes	No	Don't know
Quality, electronic data security			
Incompatible Software			
Low level of ICT knowledge / skills			
Insufficient technical endowment			
Digital Signature			
Copyright, license			
Not standardized operating procedures			
Financial constraints			
Other (specify)			

Part 7. DATA POLICIES
(to be completed only by data pproducers or holders)

27. Is data or statistical information produced by your organization / institution part of the official statistics system?

- yes
- No
- Don't know

28. Are there in your organization / institution regulations and / or internal guidelines on the following: *(check one option per row)*

Data aspects	Yes	No	Don't know
Data accuracy			
Disaggregated data production			

Punctuality of dissemination	○	○	○
Completeness of data	○	○	○
Privacy / protection of individual data	○	○	○

29. Specify the existing format of statistical data and information within your organization / institution at different stages? *(Check all that apply)*

Stage	*Paper*	*Digital (numeric) format*	*Audio, video*	*Images*	*Reusable format**
Collection	☐	☐	☐	☐	☐
Processing	☐	☐	☐	☐	☐
Dissemination	☐	☐	☐	☐	☐
Storage	☐	☐	☐	☐	☐

**format that can be further reuse, eg .standard forms (MS Excel, MS Word, Adobe Acrobat Reader, PDF, XML - Extensible Markup Language, CVS - Comma-separated Values, RDF - Resource Description Framework etc.).*

30. Is information on the manner and conditions for collecting and disseminating data available to the general public? *(Check only one option per row)*

Stage	**Yes**	**No**	**Don't know**
Collection	○	○	○
Dissemination	○	○	○

31. What are the tools used by citizens and other organizations to access data and information of your organization / institution? *(Check all that apply)*

☐ Webpage

☐ Interactive online tools (databases, electronic calculators etc.)

☐ Formal request (paper, email)

☐ Electronic services

☐ Publications, reports

☐ Press Releases

☐ Seminars, workshops

☐ Other (specify)

32. Are there interaction mechanisms of organization / institution with the respondent / data provider?

Yes **No**

Direct interaction with the respondent (phone calls, sms, letters, leaflets etc.)	○	○
Indirect interaction with the respondent (website, social networking etc.)	○	○

33. Does the respondent / data provider have the possibility to comment on the manner of collection and use of their data?

- ◉ Yes, specify how
  - ☑ Testing of questionnaires, cognitive interviews
  - ☐ Public consultations
  - ☑ Focus groups, in-depth interview
  - ☐ Hotline
  - ☐ Social media
  - ☐ Other (specify)
- ○ No
- ○ Don't know

THANK YOU FOR PARTICIPATION!

Annex 4 - Results of the Data Revolution questionnaire

1. Specify the name and website of your organization / institution		
Answer Options	**Response Percent**	**Response Count**
Name	100.0%	118
Webpage	97.5%	115
answered question		**118**

2. The contact details of the person responsible for filling out the questionnaire		
Answer Options	**Response Percent**	**Response Count**
Name, surname	100.0%	118
Position	97.5%	115
Email Address	100.0%	118
Phone number	100.0%	118
answered question		**118**

3. Specify the activity sector of your organization / institution (Specify the applicable option):		
Answer Options	**Response Percent**	**Response Count**
Central public administration	35.6%	42
Local public administration	14.4%	17
Civil society organization	1.7%	2
Academia / research institute	19.5%	23
Consultancy company	1.7%	2
Enterprise (public or private), financial institution	13.6%	16
International institution, development partner, donor	4.2%	5
Mass-media	0.0%	0
Other (specify)	9.3%	11
answered question		**118**

4. How would you characterize the involvement (role) of your organization / institution with regards to data and statistical information (check only one option per row):

Answer Options	**Producer**	**Data holder**	**User (data analysis for a particular purpose)**	**Infomediator (retrieving data for general information)**	**Funder / development partner**	**Response Count**
Main role	29	36	46	2	5	118
Secondary role	21	31	42	23	1	118
answered question						**118**

5. What types of data is using your organization / institution? Evaluate the quality of these sources on a scale from 1-5, where 1 means the lowest quality, and 5 - the highest (check one option per row)							
Answer Options	**Does not use data**	**1**	**2**	**3**	**4**	**5**	**Response Count**
Official data (by public authorities)	2	1	2	12	45	64	118
Unofficial data (case studies, independent researches, expert opinion, etc.)	28	1	8	33	40	16	118
Data from external sources (World Bank, World Health Organization, International Monetary Fund etc.)	36	8	6	9	34	33	118
						answered question	118

6. For what purpose does your organization / institution produce or using you this data as producer and / or user? (Check all that apply)			
Answer Options	**Data producer**	**Data user**	**Response Count**
Informing the general public	65	67	118
Policy, strategic framework development	54	80	118
Monitoring, evaluation, impact assessment	63	87	118
Market research	21	66	118
Develops product / analytical reports	65	75	118
On request for a fee	24	36	118
Other	15	24	118
		answered question	118

7. What obstacles faces your organization / institution in obtaining data, including from other sources? (Check one option per row)			
Answer Options	**Yes**	**No**	**Response Count**
Refusal to provide data	50	76	118
Services are for a fee	44	82	118
Data format is inappropriate	65	61	118
Lack of particular data and statistical information	104	22	118
Lack of data disaggregated by certain criteria	97	29	118
Inappropriate period of data availability	65	61	118
Inappropriate periodicity and frequency of data	74	52	118
Other (specify)			4
		answered question	118

8. How are financed the activities related to production and / or use of data in your organization / institution? (Check all that apply)	
Answer Options	**Response Count**
Public funds	87
Own financial means, including for a fee	54
Donations / grants / assistance projects	55
answered question	118

9. In which of the specified areas your organization / institution produces and / or uses data? (Check all that apply)

Answer Options	Possess and / or produce data for the indicated subdomains	Use data for analyzing the specified subdomains
1. End poverty in all its forms everywhere / Reducing extreme and absolute poverty	10	34
Social protection	26	44
Equal rights to property, economic, natural resources etc.	11	30
Economic, environmental, political, etc. crises	16	31
2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture / Food security	21	31
Providing nutrition for children, pregnant women, adolescents	10	27
Development of small producers in agrifood, ensuring access to land resources, knowledge, sales market, etc.	22	33
Modern and sustainable agricultural practices	19	35
3. Ensure healthy lives and promote well-being for all at all ages / Maternal and infant mortality	10	37
Morbidity and mortality by communicable diseases, HIV, tuberculosis, hepatitis etc..	9	40
Drug, alcohol abuse	8	34
Deaths and injuries caused by road accidents	10	32
Access to sexual health services and reproductive health services	7	34
Coverage with basic health services, financial protection, safe, quality and affordable health services	13	39
Deaths and injuries caused by air, water and soil pollution	6	28
4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all / Ensuring compulsory primary and general education	27	34
Early childhood development, access to preschool education	20	29
Access to quality vocational, technical and tertiary education	19	28
Eradicating gender disparities in education and ensuring equal access to all levels of education	18	29
Literacy, numeracy	19	26
Knowledge and skills to promote sustainable development	31	37
5. Achieve gender equality and empower all women and girls / Eradicating all forms of discrimination against women and girls	10	31
Elimination of violence against women and girls	12	32
Forced and early marriages	6	21
Domestic and unpaid work	6	19
Participation in decision-making in the political, economic and public life	11	31
6. Ensure availability and sustainable management of water and sanitation for all / Universal, equitable access to safe water sources	15	29
Universal, equitable access to sanitation	13	26
Improving water quality, pollution reduction, water treatment, safe recycling	14	25
Efficient use of water, reduction of population suffering from water shortage	10	24
Implementation of integrated water resources management	13	29
Water ecosystem protection and rehabilitation	10	28
7. Ensure access to affordable, reliable, sustainable and modern energy for all / Universal, equitable and sustainable access to modern energy sources	6	31
The use of renewable energy sources	10	28
Doubling energy efficiency	7	26

Answer Options	Possess and / or produce data for the indicated subdomains	Use data for analyzing the specified subdomains
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all / Creşterea economică durabilă	19	39
Economic productivity based on innovation, technology, labor-intensive sectors	17	37
Policies oriented towards productive activities, decent job creation, entrepreneurship, innovation, access to financial services	22	37
Employment and decent work for all, equal pay for equal work	8	36
Young people outside the labor market, education and continuous training	12	33
Forced labor, trafficking in persons, child labor	4	28
Right to work, safe working conditions	12	37
Promoting sustainable tourism in the context of job creation, cultural values and tourist products	12	25
The ability of financial institutions to increase access to banking, insurance and funding	10	26
9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation / Quality, sustainable infrastructure, available including at regional and cross-border level for economic development and welfare	21	36
Sustainable and inclusive industry, employment in the industrial sector	8	32
The access of SMEs in industry and other sectors to financial services	14	34
Efficient, environmentally friendly, non-invasive infrastructure and processes	13	34
Research, development and innovation, including in the industry	21	46
10. Reduce inequality within and among countries Sustainable growth of household incomes of the poorest	9	29
Social, economic and political inclusion for all categories of population	11	36
Discriminatory policies and practices	4	31
Equity by promoting tax policies, salaries and social protection	8	27
Safe and sustainable policies on migration and mobility	8	33
11. Make cities and human settlements inclusive, safe, resilient and sustainable / Safe, affordable housing for all	8	27
Accessible, safe and sustainable transport and roads	19	30
Sustainable and inclusive urban management	9	21
Protection of cultural and natural monuments	19	24
Deaths and injuries in the context of natural and economic disasters	5	20
Urban impact on air pollution, household waste management	10	22
Green and public spaces accessible and safe for all	10	25

Answer Options	Possess and / or produce data for the indicated subdomains	Use data for analyzing the specified subdomains
12. Ensure sustainable consumption and production patterns / Policies and initiatives on responsible consumption and production	5	17
Management and efficient use of natural resources	8	29
Waste / losses of food in trade, production process, including post-harvest	2	18
Environmental management of chemicals and all waste, minimizing their adverse effects on human health and the environment	9	25
Generation of waste by prevention, reduction, recycling and reuse	7	23
Encouraging companies to adopt sustainable practices and integration of information in the reporting cycle	2	18
Sustainable procurement practices in accordance with national policies and priorities	6	22
Information and awareness on sustainable development and a lifestyle in harmony with nature	11	21
13. Take urgent action to combat climate change and its impacts / Capacity to adapt to climate-related risks and natural disasters	13	27
Integrating climate change into policies, strategies and national plans	16	25
Education, awareness, human and institutional capacity to mitigate climate change, reduce impact	10	25
14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development Regulation of overfishing, illegal and destructive fishing practices and implementation of management plans	4	17
15. Protect, restore and promote sustainable use of terrestrial ecosystems / Conservation, restoration and sustainable use of terrestrial freshwater ecosystems	10	24
Implementation of sustainable management of all types of forests, halting deforestation, restoring degraded forests and significantly increasing afforestation and reforestation	9	21
Combating desertification, restoration of land and degraded soils	11	20
Degradation of natural habitats, biodiversity loss	11	18
Utilization of genetic resources and promoting access to these resources	6	16
Poaching and trafficking of protected species of flora and fauna	7	18
Integrating biodiversity and ecosystems into strategic planning at national and local levels	9	17

Answer Options	Possess and / or produce data for the indicated subdomains	Use data for analyzing the specified subdomains
16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels / Reducing all forms of violence and mortality caused by violence	9	31
Stopping exploitation, trafficking and all forms of violence and torture against children	9	29
Promoting the rule of law and ensuring equal access to justice	7	25
Reducing illegal flows of weapons and financial resources, combating all forms of organized crime	4	19
Reducing all forms of corruption	7	28
Develop effective institutions, accountable and transparent at all levels	7	23
Needs oriented, inclusive, participatory and representative at all levels decision-making process	8	26
Providing legal identity for all, including birth registration	2	23
Public access to information and protection of fundamental freedoms	15	27
17. Strengthen the means of implementation and revitalize the global partnership for sustainable development Strengthening domestic financial resources, improvement of taxation and tax collection	11	29
Mobilizing additional financial resources from various sources (investment, remittances etc.)	14	28
Long-term debt sustainability, reduction and debt restructuring	14	24
Reforms and national policy on investment promotion	11	37
Strengthening regional and international cooperation on access to science, technology and innovation, knowledge exchange	11	30
Development, transfer, diffusion of environmentally friendly technologies	12	27
Internet use by population	17	32
Export promotion	9	28
Facilitating sustainable and preferential access to foreign market	4	21
Increasing macroeconomic stability, including through policy coordination and coherence	8	25
Strengthening national capacities on the production of statistical indicators on sustainable development according to the disaggregation criteria relevant to each target, in accordance with the fundamental principles of official statistics	8	27

10. In your opinion, which institution is the nationwide leader in the following areas:	
Answer Options	**Response Count**
Data production	102
Use of data for the development and monitoring of policies, strategies, programs	94
Promotion of modern technologies of collection, production, exchange and access to data	93
Promotion of modern technologies for visualization and data analysis	89
answered question	105
skipped question	13

11. Does the management of your organization / institution promote production and / or use of the following data types in the organization / institution activity? (Check one option per row)				
Answer Options	**Yes**	**No**	**Do not know**	**Response Count**
Statistical data	116	7	3	118
Data from administrative sources / registries	114	3	9	118
Sociological surveys, interviews, focus groups	73	35	16	118
Internal records of the organization / company	105	11	10	118
Own estimates / calculations	107	7	12	118
Open data	104	6	8	118
Data collected through innovative methods (Big Data including sms, real time data, semantic analysis of social media, etc.)	46	48	31	118
Other (specify)				3
			answered question	**118**

12. Does the management of your organization / institution request and / or use data visualization tools (maps, infographics, databases, etc.) in the organization / institution activity? (Check one option per row)				
Answer Options	**Yes**	**No**	**Do not know**	**Response Count**
Maps, including animated ones	71	38	17	118
infographics	85	25	16	118
Online databases	112	8	6	118
Other (specify)				3
			answered question	**118**

13. In your opinion are there national regulatory and coordinating mechanisms concerning the following data aspects: (check one option per row)				
Answer Options	**Yes**	**No**	**Do not know**	**Response Count**
Developing, monitoring and evaluation of evidence / data - based policies	81	16	27	118
Statistical norms and standards	95	6	23	118
Data exchange, interoperability	89	14	21	118
Data Access	110	5	9	118
Data Protection	106	6	12	118
ICT infrastructure	87	10	27	118
			answered question	**118**

14. Is your organization / institution holding mandate for the following activities? (Check all that apply in each row)						
Answer Options	**Law**	**Government Decision**	**Regulation, internal order**	**Other (statute, regulation, etc.)**	**Has no mandate**	**Response Count**
Data collection	54	50	64	27	22	118
Data production	45	38	59	26	22	118
Data dissemination	37	25	47	24	31	118
Policy development, monitoring and evaluation	38	34	51	28	33	118
Access to data	51	43	59	33	19	118
Promoting ICT for the production and use of data	26	29	52	29	38	118
					answered question	**118**

15. Specify obstacles, limitations of the legal / regulatory framework of your organization / institution referring to production and / or use of data? (Check one option per row)			
Answer Options	**Yes**	**No**	**Response Count**
Incomplete legal / regulatory framework	70	54	118
Legal / regulatory framework with conflicting provisions	46	78	118
Lack the legal / regulatory framework	37	87	118
		answered question	**118**

16. Within your organization / institution is there a subdivision / department responsible for at least one data management activities (collection, processing, storage, dissemination, analysis)?	
Answer Options	**Response Count**
Yes	92
No	27
Do not know	5
answered question	**118**

17. Are there function within your organization / institution for the following occupations (check one option per row):			
Answer Options	**Yes**	**No**	**Response Count**
Interview operator	26	98	118
Data operator (data entry)	66	58	118
Network and / or web page administrator	99	25	118
Programmer	55	69	118
Statistician	31	93	118
Data analyst	48	76	118
		answered question	**118**

For occupations where you checked "Yes", indicate the number of functions	
Answer Options	**Response Count**
Interview operator	25
Data operator (data entry)	55
Network and / or web page administrator	88
Programmer	50
Statistician	25
Data analyst	41
answered question	**95**
skipped question	**23**

18a. To what extent the leadership of your organization / institution receives training / education in the following areas: (check one option per row)				
Answer Options	**At least once a year**	**Occasionally, every few years**	**Has not received**	**Response Count**
Data collection / production	29	41	54	118
Defining, calculating statistical indicators	19	38	67	118
Analysis and presentation of data	26	49	49	118
Policy development, monitoring	39	45	40	118
ICT	31	46	47	118
			answered question	**118**

18b. To what extent the employees of your organization / institution receive training / education in the following areas: (check one option per row)				
Answer Options	**At least once a year**	**Occasionally, every few years**	**Have not received**	**Response Count**
Data collection / production	32	42	50	118
Defining, calculating statistical indicators	20	48	56	118
Analysis and presentation of data	28	51	45	118
Policy development, monitoring	30	56	38	118
ICT	38	46	40	118
			answered question	**118**

19. How would you assess the ICT competences / skills of your organization / institution employees? Mark on a scale from 1 to 5, where 1 signifies the lack of skills, and 5 - very good skills. (Check one option per row)						
Answer Options	**1**	**2**	**3**	**4**	**5**	**Response Count**
Files management	2	5	28	49	38	118
Text processing (MS Word etc.)	1	3	15	47	58	118
Spreadsheets (MS Excel etc.)	5	16	26	43	34	118
Presentation Tools (MS Power Point etc.)	1	14	26	41	40	118
Internet browsing	0	0	15	27	82	118
Electronic mail	0	2	8	35	78	118
Working with databases (MS Access etc.)	20	28	24	30	21	118
Using specialized software for data analysis (SPSS, Stata etc.)	49	24	18	16	16	118
Using data visualization software (ArcGIS etc.)	50	20	19	18	15	118
					answered question	**118**

20. Within your organization / institution, are there procedures / tools assessing employees' ICT competences / skills (listed above)?	
Answer Options	**Response Count**
Yes	33
No	71
Do not know	20
answered question	**118**

21. Is there an active ICT community of experts, with which your organization / institution interacts to promote innovations in the production and use of data?	
Answer Options	**Response Count**
Yes	62
No	77
Do not know	44
answered question	118

22. Does your organization / institution have technical (equipment) and technology (applications, tools) capacities for data management? (Check one option per row)				
Answer Options	**Yes**	**No**	**Do not know**	**Response Count**
Collection	94	23	6	118
Processing	96	19	8	118
Dissemination, Visualization	98	15	10	118
Storage	98	19	6	118
Analysis	71	33	19	118
answered question				118

23. Are the above listed capabilities sufficient for managing large volumes of data (over 1 mln. entries)?	
Answer Options	**Response Count**
Yes	40
No	54
Do not know	29
answered question	118

24. Does your organization / institution have access to intranet and / or extranet for automatic exchange of data and information, including with other data holders? (Check one option per row)				
Answer Options	**Yes**	**No**	**Do not know**	**Response Count**
Intranet (within the institution)	93	24	6	118
Extranet (among institutions)	79	31	13	118
answered question				118

25. Does your organization / institution have a platform / portal or website compartment intended for dissemination of statistical data and information?	
Answer Options	**Response Count**
Yes	83
No	30
Do not know	10
answered question	118

If you answered "Yes" to the previous question (25. Does your organization / institution have a platform / portal or website compartment intended for dissemination of statistical data and information?), Specify the frequency of update.	
Answer Options	**Response Count**
daily	36
monthly	23
quarterly	12
annually	18
less frequently	19
answered question	118

26. What are the obstacles or factors affecting access and use of ICT for data processing and analysis by your organization / institution? (Check one option per row)				
Answer Options	**Yes**	**No**	**Do not know**	**Response Count**
Quality, electronic data security	51	48	24	118
Incompatible Software	61	32	30	118
Low level of ICT knowledge / skills	63	39	21	118
Insufficient technical endowment	62	45	16	118
Digital Signature	39	60	24	118
Copyright, license	39	55	29	118
Not standardized operating procedures	50	31	42	118
Financial constraints	86	17	20	118
Other (specify)				2
			answered question	118

27. Is data or statistical information produced by your organization / institution part of the official statistics system?		
Answer Options	**Response Percent**	**Response Count**
Yes	64.6%	42
No	23.1%	15
Do not know	12.3%	8
answered question		65

28. Are there in your organization / institution regulations and / or internal guidelines on the following: (check one option per row)				
Answer Options	**Yes**	**No**	**Do not know**	**Response Count**
Data accuracy	30	22	13	65
Disaggregated data production	19	27	19	65
Punctuality of dissemination	23	25	17	65
Completeness of data	33	21	11	65
Privacy / protection of individual data	39	16	10	65
			answered question	65

29. Specify the existing format of statistical data and information within your organization / institution at different stages? (Check all that apply)						
Answer Options	Paper	Digital (numeric) format	Audio, video	Images	Reusable format *	Response Count
Collection	48	54	10	20	24	65
Processing	31	59	3	16	22	64
Dissemination	30	52	11	14	24	61
Storage	36	55	7	13	21	62
					answered question	65

30. Is information on the manner and conditions for collecting and disseminating data available to the general public? (Check only one option per row)				
Answer Options	Yes	No	Do not know	Response Count
Collection	34	27	4	65
Dissemination	37	20	8	65
			answered question	65

31. What are the tools used by citizens and other organizations to access data and information of your organization / institution? (Check all that apply)		
Answer Options	Response Percent	Response Count
Webpage	90.8%	59
Interactive online tools (databases, electronic calculators etc.)	49.2%	32
Formal request (paper, email)	89.2%	58
Electronic services	40.0%	26
Publications, reports	76.9%	50
Press Releases	67.7%	44
Seminars, workshops	60.0%	39
Other (specify)		2
	answered question	65

32. Are there interaction mechanisms of organization / institution with the respondent / data provider?			
Answer Options	Yes	No	Response Count
Direct interaction with the respondent (phone calls, sms, letters, leaflets etc.)	59	6	65
Indirect interaction with the respondent (website, social networking etc.)	48	17	65
		answered question	65

33. Does the respondent / data provider have the possibility to comment on the manner of collection and use of their data?		
Answer Options	Response Percent	Response Count
Yes	61.5%	40
No	13.8%	9
Do not know	24.6%	16
	answered question	65

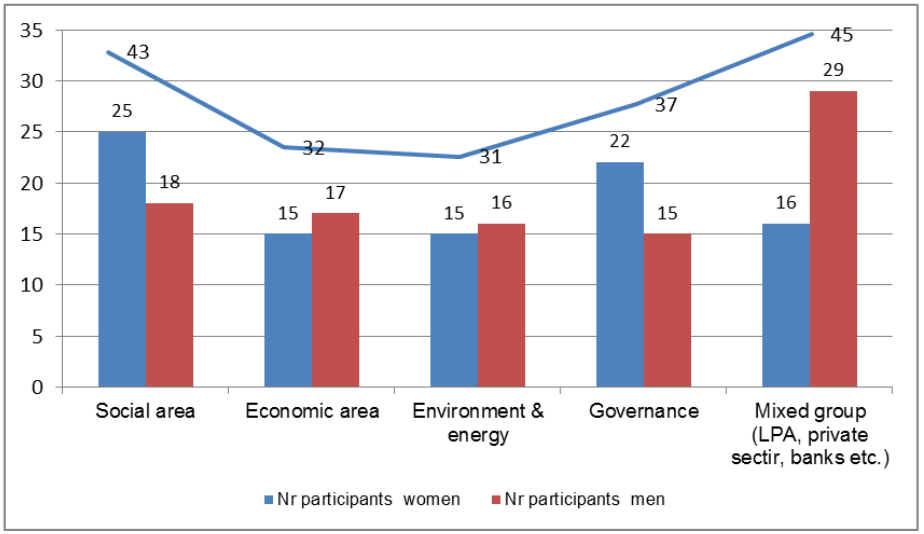
If you answered "Yes" to the previous question (33. Does the respondent / data provider have the possibility to comment on the manner of collection and use of their data?), Specify how:		
Answer Options	**Response Percent**	**Response Count**
Testing of questionnaires, cognitive interviews	52.5%	21
Public consultations	50.0%	20
Focus groups, in-depth interview	20.0%	8
Hotline	42.5%	17
Social media (social networking)	57.5%	23
Other (specify)	25.0%	10
	answered question	40

Annex 5 - Information about workshop participants

A. Information on workshops attendance and working groups structure

1. The workshops were attended by 188 persons, out of which 93 2. women and 95 men. (Annex 6 – List of workshops participants); 118 organizations were registered (Annex 4) which were informed about SDG and the data revolution with the support of the survey, and as answer to the information action they filled in the survey.

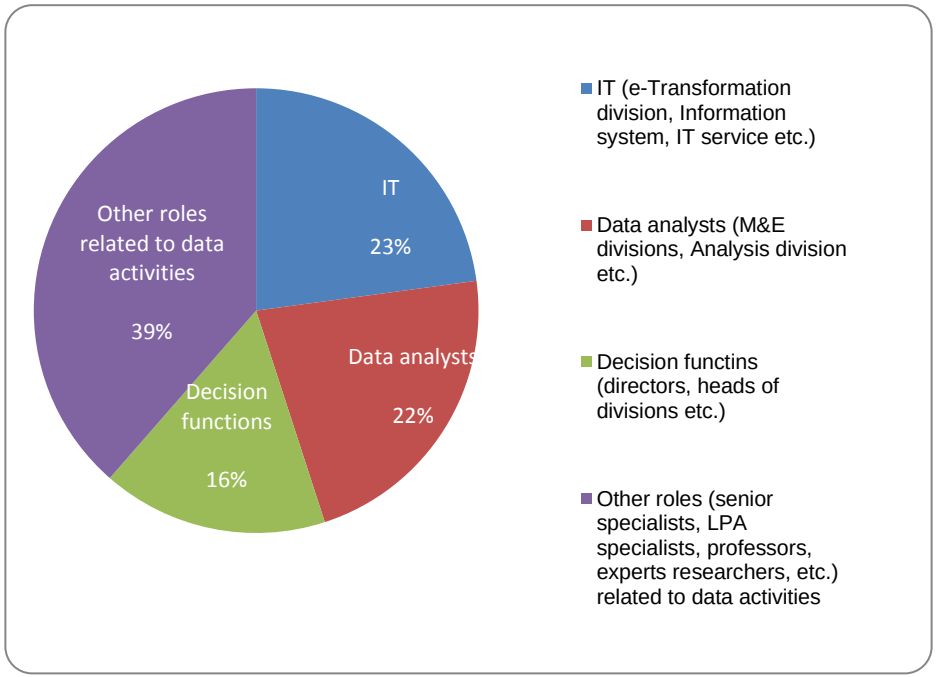
Figure 29. Distribution of the participants on workshops and gender



Source: CIVICUS MDC and IDSI Research, 2016

Each of the 5 workshops organized within the project entitled: "Mapping for the Data Revolution in the Republic of Moldova" had a specific topic and the participation of the representatives of the public administration and various data communities, as follows:

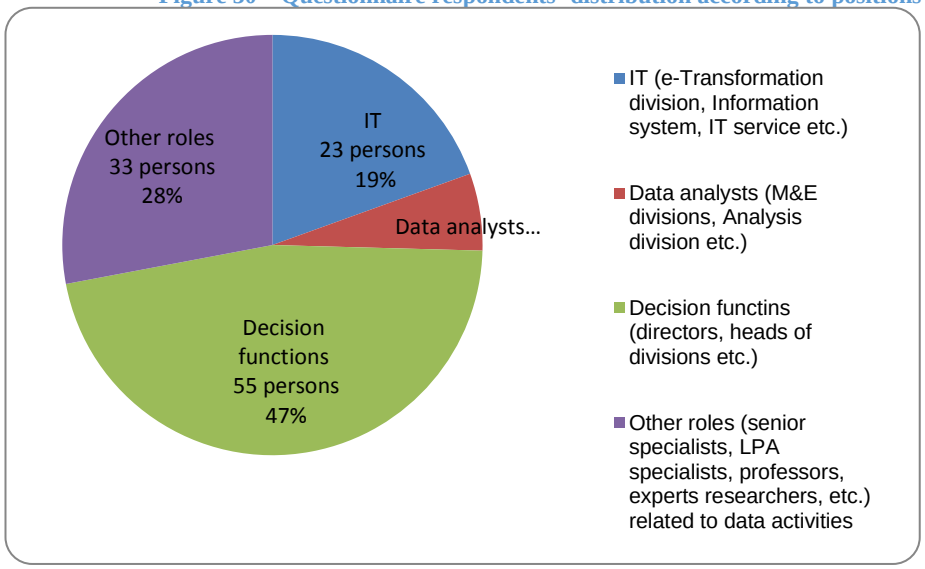
Figure 2. Workshops participants' distribution according to positions



Source: CIVICUS MDC and IDSI Research, 2016

3. The workshops were attended by persons with different positions. The employees from the IT departments (23%) and data analysts (22%) which represent almost half of the number of participant were practically represented in the same manner, which highlights the high interest that they have in data revolution. The low level of attendance of decision-makers (16%) highlights the low actual level of knowledge/awareness regarding the data revolution process or in most cases the physical impossibility to participate due to various reasons.

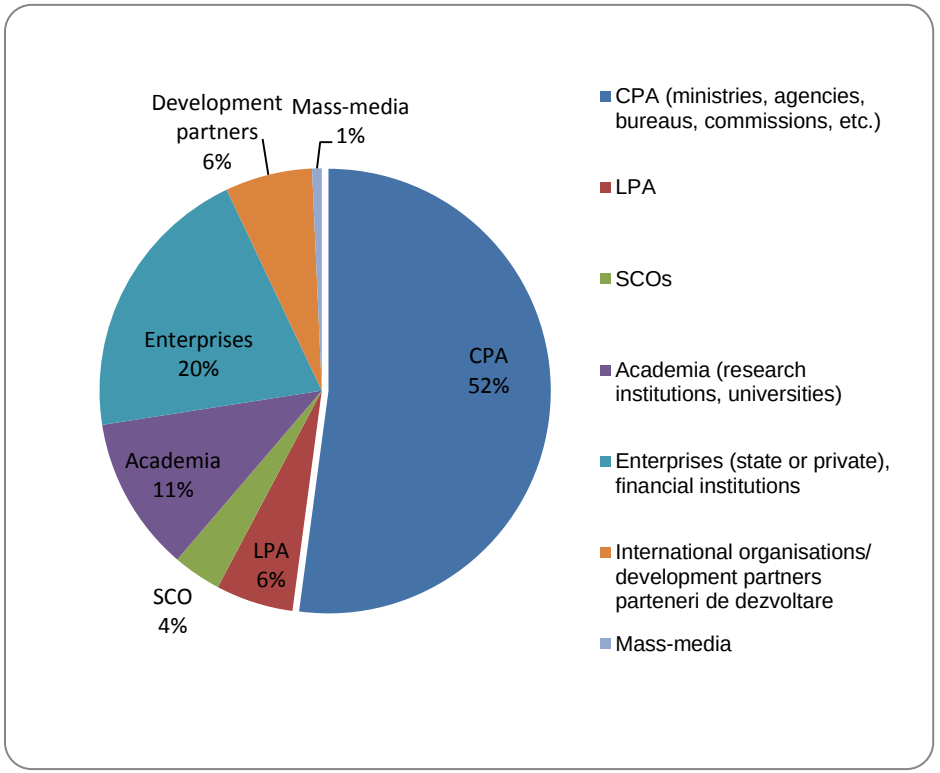
Figure 30 – Questionnaire respondents' distribution according to positions



Source: CIVICUS MDC and IDSI Research, 2016

4. The central public authorities (including 13 ministries out of the total 16) represented within the workshops 52% of the participants. One fifth - 20% was represented by (public or private) enterprises and financial institutions, followed by the academia (11%), LPA and development partners (6%).

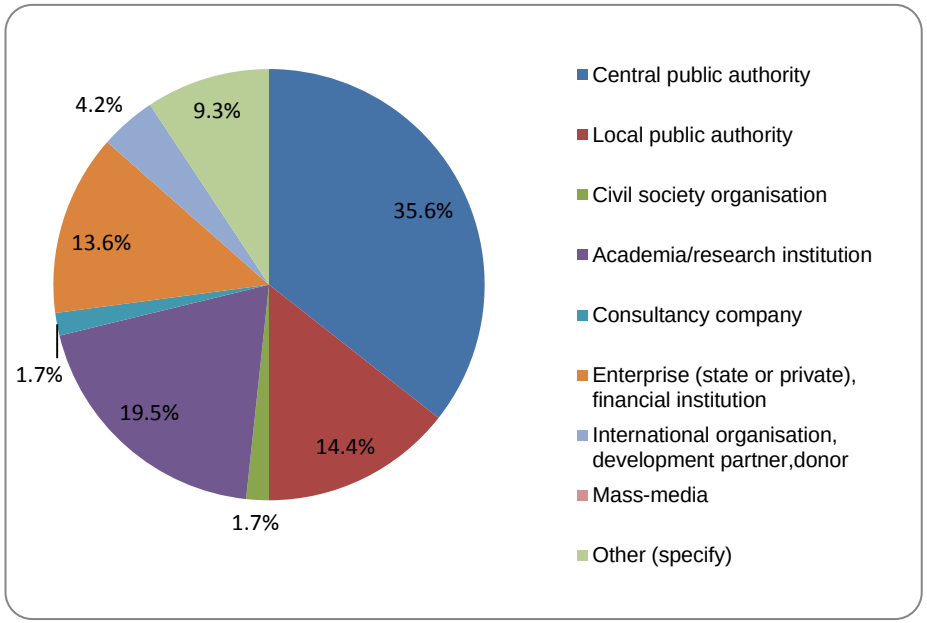
Figure 31 – Workshops participants per types of organisation



Source: CIVICUS MDC and IDSI Research, 2016

5. Similar with the level of representation and participation during the workshops, the CPA were the most responsible and active respondents of the survey on mapping of data (approximately 36% of the respondents, including 14 ministries out of the total 16), academia/research institutions (approximately one fifth of the respondents), LPA and (public or private) enterprises (approximately 14%).

Figure 32 – Survey respondents per types of institutions



Source: CIVICUS MDC and IDSI Research, 2016

B. Attendance lists by workshops

IMPORTANT NOTE - the contact data used is for official purposes only, due to the fact that the respondents who participated on Data Revolution survey are being civil servants or employees of institutions/organizations. The persons have been nominated, to complete the data requested by questionnaire, by their managers. All participants noted in the list provides the e-mail address and phone, but for confidentiality of personal data, the private e-mail account and phone number were not listed.

Workshop

Data Revolution Mapping in the Republic of Moldova (Social area)

March 22, 2016, International Business Center Le Roi (str. Sfatul Tarii nr. 29)

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GUVERNUL REPUBLICII MOLDOVA

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Workshop

Data Revolution Mapping in the Republic of Moldova
(Environment and Energy area)

March 24, 2016, International Business Center, Le Roi (str. Sfatul Tarii nr. 29)

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GUVERNUL REPUBLICII MOLDOVA

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Workshop

Data Revolution Mapping in the Republic of Moldova (Governance)

March 24, 2016, International Business Center Le Roi (str. Sfatul Ţării nr. 29)

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GUVERNUL REPUBLICII MOLDOVA

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Workshop

Data Revolution Mapping in the Republic of Moldova

March 30, 2016, International Business Center Le Roi (str. Sfatul Ţării nr. 29)

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Annex 6. Participants responses to work assignments

The opinions and proposals of the participants in the workshop on Social area, of 03.22.2016

Team work assignment:

National capabilities necessary for **COLLECTION, PRODUCTION AND USE OF DATA FOR MONITORING AND EVALUATION OF SDGs** are: a) the legal framework and procedural; b) human resources and skills required; c) Infrastructure - IT & communications / applications; d) financial resources

1.	Discuss and formulate answers to the following questions:
a) legal framework and procedures applied:	
1.	does it exist ? what is it? how would you describe the legislation on the collection, production and use of data?
Group 1	Law on official statistics; Government Decision which sets the NBS Regulation, government decisions and regulations (approved by GD) of public institutions responsible for producing, managing databases. There are provisions to ensure the collection and dissemination of data.
Group 4	Existing general framework, by areas / sectors. Each ministry, each development direction have their own legal framework on data regulation.
2.	What limitations / challenges are seen as a result of current legislation and procedures?
Group 1	Insufficient mechanisms to implement the legislation. Although the law states that the official statistics body has the role of coordinator and leader in the production of official statistics, sometimes there are no interaction mechanisms between different authorities, between the producers of administrative data, the NBS, which would make producers of administrative data accountable; to comply with certain principles and rules, so that data meets certain standards, to meet the same unique statistical codes, to comply with certain standards for the dissemination etc.
Group 4	The lack of unified national framework for the collection / production / use of data; unique methodology for calculating the indicators.
3.	proposals for solving / mitigating the limitations?
Group 1	Strengthening the NBS role as coordinator and leader under the national statistical system. Creating mechanisms (eg. by Government Decision proposed by the NBS on rules and standards for all producers of administrative data) for interaction between various authorities, for data production, dissemination.
Group 4	Unifying the procedures, empowering institutions / stakeholders by creating a single platform for data collection / analysis. Including unification of nomenclatures, codification of indicators, establishment of uniform methods for calculating the indicators.
b) specialized human resources, their training in collection, production, dissemination and use of statistics	
1.	are there human resources? how are they organized? how would you describe the functions and activities carried out by them?
Group 1	If at the NBS level there are highly skilled HR, personnel specialized in the data collection, production and dissemination, then at the Central Public Authorities level capacities are limited. There is limited capacity in the data analysis, in the population issues that are actually steps that underlie all the promoted public policies.
Group 2	Generally there are human resources, but many institutions face the problem of the lack of staff.
2.	what courses / trainings do you follow? (formal, informal)
Group 1	Occasionally some courses are held by the NBS with the support of development partners on the use of statistics without having ensured their continuity and finality.
Group 2	Due to the lack of a planned system of specialized courses, the experts only take part in some occasional training activities.
3.	what are the limitations / challenges of the existing capacity for the collection, production, dissemination and use of data
Group 1	There are no available continuous courses.
Group 2	Lack of a culture of collecting and disseminating data. Viable supply and demand mechanisms. Limited financial resources.

4. proposals for solving / mitigating the limitations?

Group 1	Conducting continuous training courses, by either introducing of study matters (eg. at the Academy of Public Administration) or by improving curricula, or other methods.
Group 2	Planning specialized continuous training courses Reviving procedures for data collection amd dissemination Strengthening the PAMED structures within CPA

c) information and communication technology infrastructure, applications

1. is there any? what are they? how would you describe the information and communication technology infrastructure, existing applications?

Group 2	There is ICT infrastructure for the collection, management and dissemination of data (information systems, state Registers, government Platforms).
Group 3 (MF, MIA, NPHC)	There is ICT Infrastructure for: Collection – partially Production – semiautomated Dissemination – occasionally, partially in a reusable format Use – Excel, XML

2. what limitations / challenges are visible on ICT and existing applications?

Group 2	Using unlicensed software products Existing IS are not fully used Turnover of staff
Group 3	in ICT administration and maintenance (vagueness of indicators)

3. proposals for solving / mitigating the limitations?

Group 2	Special purpose allocations for the development of ICT infrastructure
Group 3	Efficient allocation of financial and human resources

d) financial resources

1. are there any? which are these? how would you describe the financial resources for the collection, production, dissemination and use of data?

Group 3	There are budgetary resources (for production, collection); grants; chargeable services (dissemination)
Group 4	Existing resources are limited.

2. are there practices for attracting financial resources for thematic studies and analyzes based on data?

Group 3	there are (MICS, STEPS, PNUD…) equipment
Group 4	Existing practices for attracting sources are not systematized

3. what limitations / challenges are noticed on the funding of data?

Group 3	maintaining the continuity of funding
Group 4	sources used inefficiently

4. proposals for solving / mitigating the limitations?

Group 4	Efficient use of financial resources by investing in the training of specialists to acquire analysis skills, not just for data delivery; including to generalize and use data. Investing in developing specialized software.

2. The involvement of stakeholders, partnerships, data community - discussion on involving stakeholders / decision makers to resolve identified gaps and limitations in **the development of evidence/ statistics -based public policies**

1. at which stage of the public policy development should data producers and users work together? how would you describe the cooperation between producers and users of data?

Group 1	Ex-ante: problem analysis; identification; setting objectives, targets; establishing the framework for M & E; and in monitoring progress and self-assessment
Group 2	Initial stage/ Ex Ante, PPP
Group 3	At the initial stages (policy formulation, mandatory for monitoring, analysis of various groups of things - inefficiency, discordance in activities)
Group 4	From the beginning and throughout implementation.

2. have you substantiated a public policy using statistical data? which one? how have you used the statistics? have you monitored the implementation of the policy and the results obtained by policy on the target group? have you revised the public policy based on the results measured?

Group 1	For the development in 2012 of the Strategy for development of small and medium-sized enterprises statistics were used to analyze the current situation. A mid-term review has taken

	place in 2014 to ascertain the level of achievement of objectives, to identify the gaps, but also to develop an action plan for the period 2015-2017 based on assessment results, carried out in 2014. As a result, some objectives were re-formulated, some new objectives were introduced. Have also been used official statistics about the situation of SMEs nationwide, with reference to the specific objectives – were used more data available in the Ministry of Economy (ex. Implementing the PNAGET program). Were assessed, including the indicators at program level to decide on next steps. In such situations one should not abandoned the objectives, but should review the indicators and monitoring mechanisms.
Group 2	There must be an efficient cooperation between the institution directly in charge of policy development with NBS, Ministry of Economy, National Bank regarding data dissemination. Annual monitoring and final evaluation should be followed with statistical data, studies / analyzes. Examples: Strategies, programs (Digital Moldova 2020 The single system 112); Annual monitoring; Final assessment.
Group 4	The National Health Policy, the National Strategy for Youth Sector PNAEG
3.	Alternative and innovative ways of production, dissemination and use of information for measuring SDGs
1.	What alternatives are there today for collecting, analyzing and presenting data?
Group 1	Using ICT (software), geospatial data, private operators / mobile telephony, CPA, LPA.
Group 2	CEC - State Register of Electors which is directly linked to the population register MICT – IS on Population Documentation Civil Status – IS on population register
Group 3	using WEB technologies endowment with performance equipment
Group 4	Information technology: software, e-Government
2.	In your areas, share some innovative approaches you see possible in the future in the collection and reporting of statistics - necessary to SDGs
Group 1	Implementation of new technologies to ensure the cooperation of holders of administrative data (by exchanging data between holders of administrative data and official statistics). With reference to web pages, institutions and holders of administrative data are not using a system of good codes. Talking about data at the town halls level, all data must be encoded manually. Where we have huge bases: cadastre, CNAS, environmental inspectorate, the tax inspectorate, virtually every time the encoding is done manually. Although they are holders of valuable databases, for example because the CNAS is using postal codes and not the codes of territorial administrative units promoted by the NBS, the process is very difficult and in the end the work is done manually. In this case databases should be adjusted to official statistics codes.
Group 3	communication of DB across institutions NPHC: There are 36 public health centers showing different data on various indicators. At the moment the information is submitted on paper. If there was a central database in which the representatives in the territory would enter data, NCPH would be responsible only for the generation and processing, analysis.
Group 4	Single platform for collecting / processing
3.	Do you know cases / models in other countries of the innovative approaches that could be used / adapted in Moldova?
Group 1	National Statistical Office of Poland created a platform for the dissemination of all indicators monitored within national development strategies in various sectors. There is a common platform, very easy to use, which allows the creation of tables, charts and maps and provides answer to any question, at any stage, in reference to what level is a one strategy or another. Also for SDGs such a platform would be welcome.
Group 2	Estonia, the Nordic countries (storage, data dissemination)
Group 3	Estonia, Kazakhstan (healthcare)
Group 4	Estonia (they have a single platform to which everybody has access. Based on this platform are also calculated the indicators needed)
4.	Who did you see fit to collaborate with? What regulations would you put in place to adopt innovative measures?
Group 4	Academia, exchange with EU countries, research institutions.

The opinions and proposals of the participants in the workshop on Economic area, of 23.03.2016

1. Talk in groups about the existing and necessary national capabilities for **DATA COLLECTION AND ANALYSIS FOR MONITORING AND EVALUATION OF SDGs** and answer to the following questions:

a) legal framework and procedures applied:

i. which is legal and regulatory framework on data collection and analysis in your institutions?

Group 2 Law on Statistics, themed Government Decisions, internal regulations

ii. Identify the core limitations of this framework

Group 2 Discrepancy between normative acts / laws related to the collection and management of data

b) specialized human resources and their level of training:

i. within you institutions what are the limitations / challenges in existing human resource capacities on the collection, production and analysis of data?

Group 1 Lack of qualified staff
Low staff motivation
Insufficient training

Group 2 Limited human capacity
Insufficient training workshops (training of analyzes, infographics, data collection);
Insufficient institutional communication
Staff turnover

Group 3 Lack of qualified HR:
- poor staff training (lack of correlation in the educational process to the actual requirements of the labor market)
- lack of motivation in leadership (political interference) (sometimes senior management is not familiar, does not know all the subtleties and can be politically influenced)
- poor remuneration

ii. formulate proposals for solving / mitigating the limitations

Group 2 Continuous training
Interest / interinstitutional groups on social networking sites, etc.
More efficient use of instruments of motivation (financial / non-financial)

Group 3 HR selection based on objective criteria
Authority of the institution (how is it seen in the society, in conjunction with other public authorities, how prestigious it is)
Continuing vocational training (according to the new requirements, new technologies)
Participation and collaboration in the training process (correlation of study subjects to the actual requirements of the labor market)
Adequate remuneration (so to attract competent staff)

c) infrastructure and information and communication technology

i. in your institutions, what are limitations / challenges the use / application of ICT at every stage - collection, dissemination and analysis of data?

Group 1 Insufficient IT performance equipment
Specific procurement requirements
Limited financial resources
Limited data exchange between institutions
Inconnect
Need for software to analyze data

Group 3 Outdated (lack) IT infrastructure (ie no internal network, Intranet or links between computers)
The lack of methodological coordination (each institution of conducts analysis out of its own vision)
Lack of uniformity / standardization of IT solutions (also leads to the issue of interconnection, everyone forwards the information in different ways: Excel format, paper etc. making data sharing a difficult process)
Lack of policies to prioritize IT solutions (not made at country level)

ii. formulate proposals for solving / mitigating the limitations

Group 3 Investing in infrastructure
MCloud

Training
Subcontracting civil society, businesses, public private partnership

d) financial resources

i. what are the sources of funding for the collection, dissemination and analysis of data?

Group 1 Means from the state budget (possible lack of funding) are not considered priority expenditures

ii. what is the sustainability of these sources (regularity)?

2. Talk about evidence / statistics -based decision making, answering the following questions:

i. Give some examples when you have used data in making decisions?

Group 1 License suspension (in making the decision to suspend the license)
Selecting technology transfer projects (criteria)
Develop training programs for the unemployed
Develop budgetary and fiscal policy (performance indicators)

Group 2 Situation analysis
Identifying the problem
Monitoring process
Example: macroeconomic forecast
Identifying alternative sources (studies, surveys, researches, etc.)
Ministry of Economy: Based on statistical data assesses the situation, for example in the field of investment; based on them, are prepared particular strategy (eg. Strategy for foreign trade and investment). For monitoring statistical implementation are use some statistical indicators. Based on statistical data, forecasts for macroeconomic indicators are issued, which are used to develop medium-term expenditure framework.

Group 3: Monetary policy decisions
Distributing aid / subsidies based on the actual circumstances (eg. The granting of subsidies to fruit producers during the embargo from Russia)

ii. How did you proceed in the absence of the necessary data for decision justification / making?

Group 1 1 - request from the institution that holds the necessary data
2 - accessing the date.gov.md portal to check if the data are published
There are cases when authorities are answered that the request is rejected because it is not within their competence or the access is being restricted on legal basis.
Sometimes it is necessary to amend the legal framework to compel eg. commercial banks to provide an information requested.

Group 3 Estimates (by experts, or based on previous experience)
Extrapolations
Other experiences (from neighboring countries or other institutions with such situations)

3. Answer the following questions on **alternative and innovative ways of collecting, disseminating and analyzing** information needed to measure SDGs:

i. What MDG indicators have you reported so far in your area of work? with whom have you collaborated for reporting the indicators?

ii. What would be in your fields of activity, some examples of innovative approaches that you could have used or you see possible in the future for:

- collection, dissemination and analysis of data
- rapid response to crisis

Group 1 The Ministry of Finance is implementing a new system that ensures completion, preparation and presentation of financial reports via the information system instead of paper.

Grup2 Interactive data platform (which must be linked with business and civil society)
group-emails between institutions holding and collecting data

Group 3 New solutions (IT) for data collection + analysis (eg. fiscal apparatus - online filling of returns, or NBM collects information from all banks online, business intelligent system - analyzing the institution using analysis packages, forecasting)
Diversification of ways and means of dissemination (online databanks, interactive maps, infographics which facilitate the visualization and understanding of data)
Increase the frequency of reporting

iii. Who would you see fit to collaborate with on the adoption / implementation of innovative measures? What regulations would you put in place?

Group 1 Collaboration is needed both e-Government Center and other public authorities in the field. It

	is appropriate to establish by a resolution or by a normative act obliging everybody to be receptive, to be understanding, to participate in data sharing and access to different data needed.
Group 3:	e-Governance Center (which coordinates the work in the field) Donors / development partners: the World Bank, UNDP, EBRD, which bring solutions, experiences, new visions PPP Civil society

The opinions and proposals of the participants in the workshop on Environment and Energy area, of 24.03.2016

1. Talk in groups about the existing and necessary national capabilities for **DATA COLLECTION AND ANALYSIS FOR MONITORING AND EVALUATION OF SDGs** and answer to the following questions:

a) legal framework and procedures applied:

iii. which is legal and regulatory framework on data collection and analysis in your institutions?

Group 1	Law on Electronic Communications Internal regulations Law on Informatics Law no. 149 on fishing and fish farming Argos Convention on access to information Normative acts - GD

iv. Identify the limitations of this framework

Group 1	Legal framework Normative framework Insufficient access to information

b) specialized human resources and their level of training:

iii. within you institutions what are the limitations / challenges in existing human resource capacities on the collection, production and analysis of data?

Group 1	Section of synthesis of information Narrow specialization of cadres Technological limitations or lack thereof
Group 3	(Moldova's Waters, Hydrometeo, Civil Protection Service) Lack of entities responsible for collecting, analyzing data High staff turnover (insufficient motivation)

iv. formulate proposals for solving / mitigating the limitations

Group 2	Ensuring specialists with adequate professional level Improving data collection Financial motivation of staff
Group 3	Adequate remuneration Creating specialized units by subject area Training persons responsible for data (SIG)

c) infrastructure and information and communication technology

iii. in your institutions, what are limitations / challenges the use / application of ICT at every stage - collection, dissemination and analysis of data?

Group 1	Decision making in this area Based on the data received, decisions are taken on nominating the supplier on a given market segment
Group 2	Lack of ICT tools (software, licenses) Shortage of well-trained cadres in state institutions The lack of a uniform methodology The lack of a catalog of data (one-stop) / single platform in the area
Group 3	Insufficient financial resources to purchase and maintain the SIG

Example (Hydrometeo) material stimulation
Lack of data at statistics - drawing reporting forms at NBS

iv. formulate proposals for solving / mitigating the limitations

Group 1 Drawing reporting forms at NBS

Group 2 Creating a single platform
Encouraging the use of data
Develop metadata (and presentation)
Communication about the available data data and awareness raising of data users

d) financial resources

iii. what are the sources of funding for the collection, dissemination and analysis of data?

Group 2 State budget – ecological fund
Donor sources

iv. what is the sustainability of these sources (regularity)?

2. Talk about evidence / statistics -based decision making, answering the following questions:

iv. Give some examples when you have used data in making decisions?

Group 1 The data led to material stimulation
Data useful for the purposes of court proceedings
Data that determined the level of risk, legal violations (ex. MIA)

Group 2 Using macroeconomic indicators for budget preparations
Data on average salary for social payments

Group 3 Contribution to the RM reports to the international community

v. How did you proceed in the absence of the necessary data for decision justification / making?

Group 1 The decision was postponed until acquiring data needed

Group 2 Estimates are made
Questioning institutions (to identify data gaps)
Changing the indicators

3. Answer the following questions on **alternative and innovative ways of collecting, disseminating and analyzing** information needed to measure SDGs:

iii. What MDG indicators have you reported so far in your area of work? with whom have you collaborated for reporting the indicators?

Group 1 Penalties
Damages
Pollution

Group 2 Ex. Ministry of Environment has signed 19 international treaties under which it undertook certain reporting obligations. In this respect, a more active inter-ministerial / inter-institutional cooperation is required

iv. What would be in your fields of activity, some examples of innovative approaches that you could have used or you see possible in the future for:

- collection, dissemination and analysis of data
- rapid response to crisis

Group 1 GPS: alert applications; GIS technologies; blocking outbreaks

Grup2 Citizen participation through online tools
Special research through the involvement of the people in the territory (the town hall, citizens)

vi. Who would you see fit to collaborate with on the adoption / implementation of innovative measures? What regulations would you put in place?

Group 1 Neighboring countries and the EU

Group 2 Collaboration with the citizens, businesses, civil society, academia

The opinions and proposals of the participants in the workshop on Governance area, of 24.03.2016

1. Talk in groups about the existing and necessary national capabilities for DATA COLLECTION AND ANALYSIS FOR MONITORING AND EVALUATION OF SDGs and answer to the following questions:

a) legal framework and procedures applied:

v. which is legal and regulatory framework on data collection and analysis in your institutions?

Group 1	Laws (official statistics, NBM, Public Finance)
	Audiovisual Code, Customs Code, the Tax Code etc.
	SDDS commitments

vi. Identify the limitations of this framework

Group 1	Privacy: dissemination, data exchange
	Personal data

b) specialized human resources and their level of training:

v. within you institutions what are the limitations / challenges in existing human resource capacities on the collection, production and analysis of data?

Group 1	Highly qualified, but insufficient HR
	Insufficient motivation (especially the material one)
Group 2	Data disaggregation
	Lack of indicators
	Lack of data analysis 'tools'
	Limited training (trainings, exchange of experiences, study visits)
	Insufficient financial resources
	Public institutions - universities

vi. formulate proposals for solving / mitigating the limitations

Group 1	Financial incentives
	Education, trainings, seminars, round tables
	Promoting cooperation
	Attractive working environment / conditions

c) infrastructure and information and communication technology

v. in your institutions, what are limitations / challenges the use / application of ICT at every stage - collection, dissemination and analysis of data?

Group 2	Data collected manually (software)
	Interinstitutional collaboration (loss of information)
	The low level of HR capacity
Group 3	Outdated Software
	Data Calculation partly on paper
	Manual processing of data with the heads of institutions
	Entering erroneous data
	IS needing improvement
	The low level of training (especially in IT) of staff in the territory

vi. formulate proposals for solving / mitigating the limitations

Group 3	Good training of the personnel in the territory
	Incentivizing / penalizing employees
	Continuous training / change of mentality

d) financial resources

v. what are the sources of funding for the collection, dissemination and analysis of data?

Group 3	State budget
	Donors

vi. what is the sustainability of these sources (regularity)?

2. Talk about evidence / statistics -based decision making, answering the following questions:

vii. Give some examples when you have used data in making decisions?

Group 1	Decisional transparency

	Changing the base rate
	Decisions based on monitoring
	Drafting the state budget
Group 2	MDRC - SNDR 2016-2020
	MTS - SNST 2020

viii. How did you proceed in the absence of the necessary data for decision justification / making?

Group 1	Involving experts
	Application of economic models
	Changing the production process (legal framework)
	Specialized research

3. Answer the following questions on **alternative and innovative ways of collecting, disseminating and analyzing** information needed to measure SDGs:

v. What MDG indicators have you reported so far in your area of work? with whom have you collaborated for reporting the indicators?

Group 1	Did not participate directly (but transmitted data for portals date.gov, monitorizare.gov.md)

vi. What would be in your fields of activity, some examples of innovative approaches that you could have used or you see possible in the future for:

- collection, dissemination and analysis of data
- rapid response to crisis

Group 1	Best practice
	International standards (SDDS, NSDP internally, in institutions)
Group 3	Automating the process of recording information by scanning documents (electronic chip, QR code) and limiting human factor
	Data dissemination through single mechanisms at the state level

ix. Who would you see fit to collaborate with on the adoption / implementation of innovative measures? What regulations would you put in place?

Group 1	Interstate institutions permanently
	International
	Reintegration of the country
Group 2	Internal collaboration (NSRD), Relevant Institutions: NBS MLSPF, MIA, ANFM
	Ministries, NBS, E-Government

The opinions and proposals of the participants in the workshop
Mixed group (private sector, financial and banking sector, LPA etc.)
of 30.03.2016

1.	Give examples of partnerships that you have built and which contribute to development of the country and to improving the living standards of population:
	i. the purpose of the partnership
Group 1	Water supply system construction
Group 2	Diversification and expansion of services for the society by facilitating the use of information technologies
Group 3	Private - Public: Fostering quality education
Group 3	Public - Public: Improving social environment in the community
Group 4	Attracting investment (Public, Private - PPP)
	ii. partners
Group 1	LPAs from adjacent villages
Group 2	Novateca Program Ministry of Culture MICT LPA
Group 3	Private - Public: MAIB – HEI (merit scholarships for performance in education, business plans competitions, motivating students)
Group 3	Public - Public: Similar communities from other geographical areas
Group 4	CCI + BNS + IMM + Interfax
	iii. target group
Group 1	villagers in question
Group 2	Community
Group 3	Private – Public: Students
Group 3	Public - Public: Citizens of the community
Group 4	IMM + APL + Foreign companies
2.	For the development / extension of service / activities of your organization, do consider the needs of specific vulnerable groups?
	i. Give examples of such situations:
Group 1	First payment relief with subsequent identification of resources
Group 2	Admission to higher education Urban/ rural/ left bank of Nistru Disadvantaged children, invalids Special services for elderly, disabled
Group 3	Processing servicing beneficiaries of social insurance Ex. Pensioners independently choose their servicing bank (since 2015). MAIB is one of the banks that has taken over a part of recipients of social benefits. It was a legislative initiative, given the problems in the banking sector, or the idea circulated for years that any person could decide whom he/she wants to do banking with.
	ii. What were the benefits / limitations, the results / impact of these decisions?
Group 1	Vulnerable families were also connected
Group 2	Access to education Social inclusion Security
Group 3	Favorable conditions for a specific, vulnerable segment Increase in customer portfolio
Group 4	Packages of incentives Free accommodation and budget contracting (reliefs, access to training)
3.	How do you ensure access to data / information about your business / your organization to the general public? Give examples

Group 1	Websites of the institutions, reports, press releases etc.
Group 2	Publication of information on the webpage
	Social networks
	Portal
Group 3	Public NBM reports on NBM website
	Information on the bank's website on the legal framework
	Mass-media sources
	Statistical reports
Group 4	Web, newsletters
	Reports to other institutions
	Print

4. In the process of decision-making based on evidence/data, answer the following questions:

x. Give some examples of the use of data in decision making across the organization / company?

Group 1	Polls
	Data about the consumption capacity, payment
	Accessible quality
Group 2	UASM collects data on employment of graduates (USM does not have such a database)
Group 3	Development of bank's strategies, business plans
	Adopting decisions on financing in the real economy
Group 4	New packages with MTC
	Sectoral recommendations based on data

xi. What types of data have you used?

Group 1	Official data and statistics
Group 2	Depersonalized customer data: age, location etc.
Group 3	Statistical data on the types of economic activity
	Financial data provided by beneficiaries
Group 4	*CCI*: Sector statistics; Regional data (district)
	MTIC: Surveys / Public Data; Internal data (sales, segmentations)

xii. How did you proceed in the absence of the necessary data for decision justification / making?

Group 1	Collection, field trips
Group 2	Surveys, polls
Group 3	Alternative sources (ministries, media etc.)
Group 4	Data were purchased
	Case studies
	Market studies
	Surveys / Focus Groups

5. Answer the following questions on **alternative and innovative ways of collecting, disseminating and analyzing** information needed for development:

vii. What would be in your fields of activity, some examples of innovative approaches that you could have used or you see possible in the future for:

- collection, dissemination and analysis of data
- rapid response to crisis

Group 1	Collection: Bar Code, QR Code
	Smart meters
	Data on the impact ltd Apa Potabila on the Environment
	Conditions to the realization of intentions, to the level of satisfaction of the population
Group 2	Using information technologies
	Creating standards based on best practice for: collection, dissemination and analysis of data
	Planning and testing plans
	Standards and legislation
	Data interoperability
	Opening data

Group 3	Opinion polls Analyzing data recorded at Call-Center Analysis of socio-economic potential with the support of Local Authorities Ex. Wine crisis
Group 4	New information systems developed with common data Creating databases

viii. Who would you see fit to collaborate with on the adoption / implementation of innovative measures? What regulations would you put in place?

Group 3	Public institutions (local, State ones) Producer communities, by segments Consumer communities With NBS, Public institutions (Ministries)
Group 4	Decision-making level: state institutions (MITC, e-Government Center, Ministry of Justice, Customs Service) Implementation Phase: Private IT Companies Dissemination Phase: Marketing Companies