UNITED NATIONS DEVELOPMENT PROGRAMME

Република Србија
Влада
КАНЦЕЛАРИЈА ЗА ИНФОРМАЦИОЧЕ ТЕХНОЛОГИЈЕ
И ЕЛЕКТРОНСКУ УПРАВУ

Бр. 030-03-205/2021-01
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Project Title: Open Data for Sustainable Development
Project Number: 00122982
Implementing Partner: Office for IT and e-Government (ITE)
Start Date: 23 July 2021   **End Date:** 31 March 2022
LPAC Meeting date: 29 June 2021

Brief Description
During the last 3 years the open data ecosystem has been growing, attracting various stakeholders to explore open data opportunities. From small and mostly project supported initiatives, open data has become recognised as one of the enablers for the transparency and citizen engagement among government institutions. However, there are a number of institutions on the national level, mostly those who are owners of high-value datasets, still reluctant to engage and release open data. Therefore, this project will focus its activities on building the capacity and trust of high value data owners and increase the presence and visibility of open data benefits in society in two primary fields: 1. public finances and environmental protection. It will stimulate the development of new innovative services and the release and reuse of high value datasets on the national and local level, as well as bridge the gap between science and innovative businesses, through an application of data leading to economic growth. Data, and especially open data, goes hand in hand with advances in technology, leading to digital transformation of old and creation of emerging markets. These processes allow new players to enter the market (creating new and more job opportunities) as well as savings of time and money (e.g. through new digital services or more informed decision making). Finally, there is no sustainable economic growth without data informing decision making on the in the local ecosystem and supporting environmental sustainability parallel to growth. The project will contribute to the implementation of the Programme for Development of e-Government 2020-2022, and implementation of the current cycle of the Open Government Partnership Action Plan (2020-2022).
In parallel with the national level, where the focus will be on finance and environmental data, the project will also mainstream the open data initiative on the local level, feeding into smart city development, environmental protection and local development in Serbia. The project will support data release, data reuse and capacity building, as well as strengthening the capacities of the Office for Information Technology and Electronic Government, which will become the resource centre for all data owners and the users' community in Serbia. Additionally, big project component will be focused on the management of pollution data in the Serbian Environmental Protection Agency, and their coordination with the local level of governance.

Contributing Outcome (UNDAF/CPD, RPD or GPD): All people benefit from effective governance and meaningful civic engagement.	**Total resources required:**		$ 852,569.28
	Secured resources:	**UK GGF:**	$ 852,569.28
Indicative Output(s): Use of digital technologies and big data enabled for improved public services and other government functions	**Unfunded:**		0

Agreed by (signatures)[1]:

UNDP	Implementing Partner Office for IT and e-Government (ITE)

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[1] Note: Adjust signatures as needed

Anas Fayyad Qarman	*[signature]* [stamp: РЕПУБЛИКА СРБИЈА]
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Date: 06-Aug-2021	Date:

1 DEVELOPMENT CHALLENGE

Digitalization and technology have been crucial tools that enabled the governance transformation and the provision of more efficient and accessible services to citizens and businesses in Serbia. The recent COVID-19 pandemic further enhanced the importance of technologies in different sectors, as the demand for up to date and reliable data increased. This demand has included both fundamental (such as number of infected patients, self-isolated, cured, and hospitalized persons, outbreak locations, etc) and sophisticated (effects on education, economy and jobs to access and delivery of services) data and information in various areas.

The authorities in Serbia followed this trend, enabling access to raw data and user-friendly visualizations. These technical improvements have shown the value of open data, contributing to understanding the Government's measures, connecting stakeholders around specific topics and issues, and creating platforms for actions. Alongside the pandemic context, releasing data remains in the centre of government policies and academic research, private-sector innovations, and the work of civil society organizations and media.

Publishing data is, therefore, inherently linked with both policymaking and decisions on specific policy instruments. Data analysis practically enables governments to define priorities and policies. These decisions, through funding and legal provisions, invariably influence other stakeholders' behaviour. For example, the opening of real-time transport data presents a direct incentive to the IT community to develop mobile applications that allow more straightforward navigation of the public transport system. This information, in turn, might enable local businesses to serve customer needs better.

Open data is a powerful tool to stimulate growth in the economy. Data analysis serves as the basis for new competitors' decisions to enter the market, also enabling decisions and innovative practices among the small and medium-sized enterprises.

Technical advancements, such as 4G mobile networks, enhanced data production and enabled universal connectivity. User-generated content increased social networks' growth; also, this had positive effects on knowledge and geospatial repositories (such as Wikipedia and Open Street Maps). Finally, advances in cloud infrastructure and big data analytics supported the emergence of the new digital economy: the evidence shows that seven out of ten "giant" corporations by market capitalization are digital data-driven businesses. The data growth and use will likely continue in the future, driven by different technologies -such as 5G mobile internet, Low Earth Orbit satellite internet, autonomous vehicles and sensor networks/Internet of Things.

Simultaneously, digital transformation and open data initiatives in Government resulted in increased availability and large quantities of data from public sources. Some examples could be census data, tax data, data from the e-health and environment monitoring systems. The Government's priority remains to collect and analyse data related to the provision of public services and overall development. In parallel, the private sector collects and generates data for commercial purposes, focused on users' needs, which can be complementary to the public sector data. The future challenge is to ensure greater interoperability between private and public data sources, ensuring complementarity and connectivity, while also protecting the privacy of users. Practically, public data could offer population-related information of interest for development policies. Private sector generated data offers greater frequency, timeliness and granularity. Analysed in conjunction, the re-use of open government data can create new business opportunities while re-using data from the private domain can facilitate policymaking and implementation to address the real needs of different stakeholders.

The Republic of Serbia is on an accelerating path of digitalization, with a young but solid open data ecosystem that is prepared to grow. The achievements under the UNDP implemented and GGF funded initiative "Open Data – Open Opportunities" brought Serbia to a higher level. However, the need to ensure the sustainability of the open data initiative and ecosystem in Serbia is evident[2]. The following paragraphs outline the Government of Serbia's challenges and efforts, as the main open data publishers. This part outlines the broader open data ecosystem's role and engagement, including data relevance in a rapidly changing world.

Institutional framework and government capacities for open data in Serbia: The legal framework for open data, including laws and bylaws, has been fully established. The Law on e-Government[3] was adopted and introduced the right to re-use open data, along with definitions of "open data", "open format", "machine-readable form" and "National Open Data Portal"[4]. The Law binds public institutions to release data in open formats upon request (following a procedure similar to Freedom of Information (FOI) requests).

The Office for Information Technology and Electronic Government (ITE), has been established (2017) to design and develop eGovernment and information systems, as well as develop and implement IT standards in state administration bodies and government services. The ITE complements the Ministry of Public Administration and Local Self Government's role as the central institution for e-government and open data legislation.

Also, a new Department has been established in the Ministry of European Integration: Department for Coordination of the Process of Aligning National Reforms with EU Policies and Instruments for Achieving the Green Deal and Sustainable Development. This Department performs tasks related to the following: coordination of activities related to aligning with the goals of EU policies for achieving the Green Agenda and digital transformation and sustainability; preparation of strategic, plan and legal documents and special programmes of the Republic of Serbia for achieving the green and digital transformation; strategic improvement of political coherence and the system for monitoring sustainable development; provision of expert assistance to public administration bodies related to achieving the goals of the Green Agenda, digital transformation and sustainable development as a national and international obligation of the Republic of Serbia and the European Union; establishment of the management system for programmes financed from structural funds and the Cohesion Fund of the European Union; coordination of activities of legislative alignment with the EU acquis in the areas of agriculture and rural development, food safety, phytosanitary matters and fisheries (ch 11, 12 and 13); coordination of the development of a system of regional policies of the RS and use of structural instruments for the purpose of enabling the RS access to other EU policies (Cohesion policy and Common agricultural policy) and funds intended for them; coordination of the preparation of strategic documents in the EU accession process in the areas of agriculture and rural development, food safety, phytosanitary matters and fisheries; coordination of alignment of national reforms in the EU accession process through strategic and practical adjustment of the political and legislative framework with a view to achieving EU values and goals of the European Green Deal and sustainable development; coordination of the process of transposing the EU acquis in the areas covered by the negotiation clusters Fundamentals, Internal Market, Competitiveness and Inclusive Growth, Green Deal and Sustainable Connectivity, Resources, Cohesion and Agriculture, and External Relations, for the purpose of integrated achievement of the goals of sustainable development under the 2030 UN Agenda; coordination of cooperation of public administration bodies with the European Commission and other expert bodies of the EU in achieving the goals of sustainable development and the 2030 Agenda, as well as other tasks within this area.

The inter-sectoral Open Data Working Group (ODWG) was established through a Government decision as an inclusive and flexible body to facilitate communication among data owners and data users. The

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[2] Financial Times, June 2020: Belgrade's fast-growing tech start-ups show Serbia's 'hunger for success'
https://www.ft.com/content/03f995f0-9c12-11ea-871b-edeb99a20c6e
[3] Law on e-Government, Official Gazette of the Republic of Serbia, number 27/2018
[4] The Bylaw on the National Open Data Portal was adopted (December 28, 2018), regulating the Portal's work, its administration, registration of an account, and the terms of use of published datasets.

ODWG members come from diverse groups, such as the government sector, civil society, tech community and academia, reaching almost 70 members. The ITE has a prominent role, as a coordination body for the ODWG, also administering the Open Data Portal.

UNDP and other development partners have been working on developing capacities of the ITE; these efforts included data owners for data release and catalysed open data mainstreaming in the Serbian government. The ITE, as a beneficiary of the project "Open Data – Open opportunities", has increased its internal "open data" related capacities, also assisting with the development of capacities of other institutions at the central and local government level. The National Academy of Public Administration has adopted a training program in open data as a regular program for civil servants' professional development. The Ministry of European Integration should be included as the beneficiary of the project here.

The ITE has established a dedicated open data team inside the institution and created stronger ownership of the open data initiative. This team and the ITE requires support and technical assistance concerning on-going and new open data initiatives. Additionally, the ITE needs assistance to develop standards and tools to respond to needs and developments in the open data ecosystem and ensure tailor-made support to each public body.

The issue around the governance of data is present and the ITE requires developing its capacities in this area, including a definition of compliance framework and ensuring compliance evidence. The Law on eGovernment defines the licence for open data and provides a basic framework for data owners, accessibility and terms of use. However, capturing and publishing quality metadata and datasets through its lifecycle has not been fully established.

National Open Data Portal (www.data.gov.rs)[5], with more than 2100 data resources at the end of 2020. However, the quality and value of those datasets are still not on a satisfactory level. The Serbian open data ecosystem reached a level where high-value datasets need to be released to stimulate further open data ecosystem growth. Data management and data exchange practices within the government need to improve. There is also a need to enhance data literacy initiatives and raise awareness about the potential of open data for all sectors. Data supply and demand need to be scaled, tackling the issue of insufficient communication between data owners and data users

Open data efforts for higher impact: Republic of Serbia has been categorized between followers and fast-trackers on the categorization scale of the European Data Portal[6]. The main challenge has been with the release of high-value datasets and creating a data sharing culture and practices across different sectors. The recent Open data and Public Sector Information Directive[7], introduced the concept of high value datasets into the regulatory framework, defined as documents whose reuse is associated with important benefits for the society and economy. The high value datasets are: 1) Geospatial; 2) Earth observation and environment; 3) Meteorological; 4) Statistics; 5) Companies and company ownership; and 6) Mobility.

Serbia has made progress regarding official statistics and release of some environmental open data. Geospatial data and meteorological data are subject to payment, with currently very limited space for action to enable their release as open data. For most of the critical areas, there will be space for additional adjustments and activities. Additionally, the advocacy work for release of mobility data in the open data format has contributed to the release of public transportation open data in 5 cities. However, the release of data related to companies and company ownership has been weaker and would require more targeted efforts.

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[5] Launched in October 2017

[6] Open Data Maturity in Europe 2018, November 2018, https://www.europeandataportal.eu/en/news/open-data-maturity-europe-2018

[7] Open Data and Public Sector Information Directive, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L1024&from=EN

Public finances data: public finance is a core area for any state's functioning and growth, including its governing structures' accountability and transparency. Access to data on budget and public spending is seen as highly relevant[8], showing the overall situation in the country. In this context, the Open Budget Index[9], for example, ranked Serbia as a "minimal transparency" country, with a poor score in the last report[10] (released in 2019, with a decrease in three points compared to 2017). Government expenditure through public procurement is one of the activities most vulnerable to corruption[11], that could be mitigated with increased availability of quality open data.

Some of the steps to create a positive change in this area have already been taken, with budgets of dozens of local self-governments (LSGs) and public procurement data being available on the National Open Data Portal.

The Public Procurement Office is publishing open data on the public procurement procedure type, place, municipality, form of ownership, the contracting authority's activity, the contracting authority type, organisation and category. The cooperation with the Public Procurement Office (PPO) has been scaled to include a separate component, focused on the Open Contracting Data Standard (OCDS), defining a common data model to disclose data and documents at all stages of the contracting process[12]. This model supports organizations in increasing contracting transparency, allowing a more in-depth analysis of contracting data[13].

The necessity for an intervention focused on open data in the domain of public finance clearly exists and responding to it could have profound impact on government transparency and accountability, private sector growth and citizen trust, as well as creating further momentum for opening other categories of high-value datasets.

Environmental protection data: one of the critical results of the project "Open data-open opportunities" has been releasing data on air quality, pollen, some pollutants, land and water quality. The partnership between UNDP, the ITE and the Serbian Agency for Environmental Protection (SEPA) contributed to this result. The biggest impact was created through the opening of real-time data on air pollution, which has been used in numerous web and mobile applications, media reports and CSO projects. This case demonstrated an increase in interest of various stakeholders in Serbia on reliable environmental data. Even with a small-scale intervention in this area, we've seen concrete changes, especially in the area of air quality. Citizens started demanding more government accountability and public information when it comes to air pollution, which led to placement of this topic higher on the government agenda (e.g. in Green Agenda for the Western Balkans that was adopted in 2020[14]). The Ministry for Environmental Protection started numerous activities focused on air quality improvement (e.g. funding for cities to combat air pollution[15] and measures to incentivize citizens to use environmentally friendly fuels[16]). Additionally, based on data released in the previous phase of the project, numerous applications were either developed based on that data, or implemented it in its work.

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[8] Release of national budget in the open data form is recognized in Open Government Partnership Action Plan in Serbia and pointed as one of the measures. Still, publishing the machine-readable format of the budget has not happened so far. Some of the main indicators have been Global Open Data Index Methodology: https://index.okfn.org/methodology/, Open Data Barometer Methodology: https://docs.google.com/document/d/1JklH_smk1Fxl5-5Ac0gJeN7o6dUnFKIDimxXtGimDdc/edit#heading=h.6w58sp75k6zv

[9] There is a special index established for the budget transparency and openness, named Open Budget Survey, which looks into the availability of public spending data in a machine-readable form Open Budget Survey: https://www.internationalbudget.org/open-budget-survey

[10] Open Budget Index Report: https://www.internationalbudget.org/sites/default/files/2020-04/2019_Ranking_EN.pdf

[11] Preventing Corruption in Public Procurement, OECD, 2016: http://www.oecd.org/gov/ethics/Corruption-Public-Procurement-Brochure.pdf

[12] The implementation of this component started in March 2020, with a prospect to be finished by the end of 2020.

[13] OCDS: https://standard.open-contracting.org/latest/en/

[14] https://ec.europa.eu/jrc/en/science-update/eu-support-decarbonising-western-balkans#:~:text=The%20Green%20Agenda%20for%20the,leaders%20at%20the%20Sofia%20Summit.

[15] https://www.ekologija.gov.rs/saopstenja/vesti/vujovic-potpisala-prve-ugovore-za-cistiji-vazduh-u-31-gradu-i-opstini

[16] https://www.ekologija.gov.rs/saopstenja/vesti/vujovic-niza-cena-prikljucka-na-gas-podstrek-gradjanima-da-predju-na-ekoloski-prihvatljivije-energente

Most notably, two applications for monitoring pollen concentration were developed (Alergeni Polen[17], Alertgen[18]), and air quality data was included in national, regional and international applications (xEco Vazduh[19], Air Care[20], and Air Visual[21]).

However, this is just a fraction of the environmental protection data collected in Serbia. Data related to agriculture, emissions, forests, and waste management, among others, could be invaluable for incorporating environmental protection fully into the open data ecosystem. This requires both mapping all the relevant data sources and data sets, establishing closer collaboration with SEPA, improving the data collection and dissemination systems on existing pollutants (air, water, waste), opening new data and incentivizing use cases that raise awareness, inform policymaking and enable better engagement of citizens, CSOs, media and the private sector in issues related to environmental protection in the country. Finally, picking up the lessons from the previous project, we need to work also on the local level when it comes to environment, as LSGs are the main providers of environment-related data. Additionally, apart from data release, raising the quality of data and IT solutions gathering data, should also be in focus of this intervention. Due to the introduction of the new environmental legislation in the process of harmonization with EU regulations, eco-reporting will need to be improved, as current reporting method will not be sufficient. This is very important particularly in regions where industrial or communal pollution is still high causing also possible health conditions. Appropriate actions must be taken, and to initiate the most efficient countermeasures, professional management tools must be introduced. Serbia is facing many environmental issues and will meet with several challenges in solving them. Bridging the gap between policy decision making and achievement of goals represents one of the major challenges. Furthermore, implementation of the acquis will require additional capacity on all levels – national, regional, and local, as well as significant time and financial resources. Directives on industrial pollution, communal pollution, especially communal waste management, wastewater management, and large combustion plants (LCP) will also require resources when it comes to following and reporting.

Going local: Unrolling the impact of open data across Serbia: the results of open data initiative in Serbia have positive effects on local-self-government units, as they increasingly recognize its importance for their citizens' lives.

LSGs produce data in many areas, which can serve as a valuable input for data-driven solutions, mainly if analysed in conjunction with the national-level datasets. Scaling of the open data initiative to the local level can, for example, achieve significant results for local public finances[22], as the area with the most significant impact on the life of local communities. Ways to include citizens have already been explored locally, with possibilities for citizens to decide on the purpose of certain funds[23]. Open data on local finances would be an additional layer, with opportunities to dig deeper, analyse and compare data across LSGs in Serbia. Apart from local finances, local mobility and transport data should also remain in focus, building on General Transit Feed Specification (GTFS[24]) data already released and reused. These datasets are important in terms of building a solid foundation for smart cities. Finally, LSGs play important role in reporting and monitorting on the pollution, feeding the national database managed by SEPA. Through this intervention, their capacities to report will be advanced, assuring higher quality of data which presents stepping stone for efficient decision making in this area.

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[17] https://data.gov.rs/sr/reuses/aplikatsija-alergeni-polen/

[18] https://data.gov.rs/sr/reuses/alertgen/

[19] https://xeco.info/xeco/vazduh/

[20] https://play.google.com/store/apps/details?id=com.gorjan.airquality&hl=en&gl=US

[21] https://play.google.com/store/apps/details?id=com.airvisual&hl=en&gl=US

[22] Apart from the champion cities like Kragujevac and Nis, there are dozens of other cities which have recognized importance of budget transparency and released their budgets in open data format.

[23] Participatory budgeting model, http://skgo.org/vesti/detaljno/2044/participativno-budzetiranje

[24] Data specification that allows public transit agencies to publish their transit data in a format that can be consumed by a wide variety of software applications. More info at: https://gtfs.org/

Previously, limited resources focused interventions and support to big data publishers, at the national level. The first "Open Data-Open Opportunities" project included activities at the local level, with one Open Data Innovation Challenge focused specifically on local datasets. These efforts have resulted in 15 LSGs (out of 45 users) participating in the National Open Data Portal, and releasing 35% of existing open datasets.[25] The datasets gathered at the local level represent a primary input for the development of innovative services for citizens. Furthermore, these results could create smart(er) cities in Serbia as a strategic direction of several bigger cities such as Belgrade, Niš and Kragujevac.

Dozens of LSGs have released their budget data in an open format, setting a positive example for replication in other LSGs. In 2020, the Office for IT and eGovernment supported 92 LSGs to publish their budget in the open data format[26]. However, the existing gap in skills and capacities among LSGs could affect data opening; thus, there is a need for a tailor-made response for each LSG to address root causes and build their capacities in a systematic manner. This challenging situation triggered the need to focus on interventions and support towards the LSGs to a much greater extent.

Open data ecosystem- communities, capacities and engagement: the open data ecosystem shows considerable vitality, with the topic more frequently present in various fora of both governmental and non-governmental stakeholders. The Open data community grew significantly, and actors created dynamic networks between themselves, with new stakeholders emerging regularly. The skills among these groups are increasing, requiring high-quality data from the Government.[27] Considering these developments, the ITE needs to cooperate with the tech community, outside of the "buyer – vendor" relation. The mechanisms for cooperation could create feedback loops and bring more quality to ongoing activities and future results. The ITE also needs to develop communication tools and a success story around open data in a simple and easy-to-understand language. In parallel, there is a need to move towards open data economics, that are beyond the open data transparency principle.

Feedback on social and online media directed towards the National Open Data Portal could be relevant in this context. Throughout the implementation of the previous phase of the open data project, the project team has regularly received informal requests for support from start-ups, NGOs, tech communities and other citizen initiatives related to open datasets, data literacy and data reuse.

This trend demonstrates a high level of interest and engagement, despite a lack of capacities in some parts of the open data ecosystem. Still, to ensure concrete and visible results, as well as growth of the open data ecosystem for society's benefits, there is a need to engage various non-governmental stakeholders, especially in media and academia.

The mechanisms to support data literacy and development of data-driven solutions within the user community require strengthening. There is a need for continuous tailor-made engagement and strong relationships between open data release and reuse. Simultaneously, to close the gap between offered data and data requested by the users, open data policy needs to be more user-focused. These efforts need to create conditions for harmonized and joint development of demand and supply of open data.

2 STRATEGY OUTLINE

The Project is designed to build and sustain a dynamic, open data environment, by connecting data owners and data users and other elements of the open data ecosystem. These results will support further the work of public administration and the quality of policymaking following European Principles of Public Administration and providing high-quality services to citizens and businesses and professional public administration that will significantly contribute to economic stability.

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[25] National Open Data Portal, www.data.gov.rs

[26] Budget Open Data Portal, https://budzeti.data.gov.rs/

[27] Open Data Week Reflections: https://data.gov.rs/sr/posts/utistsi-sa-nedelje-otvorenikh-podataka/ For example, first Open Data Week in 2018 gathered around 350 participants, and the next one in 2019 gathered around 600 participants

The Project will address the need for more high-value datasets at the national and local level in Serbia. The primary focus will be on national-level interventions in public finance and the environment, while the scope at the local level will be broader and include transport and mobility data, public utility data, etc.

The Project will also support data owners and data users' skills development to work towards concrete data-driven products. Therefore, the open data ecosystem can be strengthened sustainably through the creation of an Open Data Hub which aims to enlarge the network of open data users, raise the capacities of different stakeholders, and provide concrete services to increase the quality and quantity of open data in Serbia. The Open Data Hub should allow open data mainstreaming in various projects and sectors outside of the current open data niche.

Once available, the open data should be used by various stakeholders for different purposes: 1) for policy and evidence based decision making by the government 2) for public services development by the government 3) for business development by the business sector 4) for policy advocacy by CSOs 5) for media reporting by media outlets and 6) for research by the academic community. Finally, the data use cases developed by abovementioned stakeholders result in better services and products for citizens, who can also use open data for their everyday decisions. The project will work towards ensuring feedback regarding needs in data usage by above mentioned stakeholders, as well as include knowledge testing upon finalization of each capacity building activity. Additionally, through the activities of the Open Data Hub (data innovation challenges, workshops, etc.) the project will showcase and support usage of open data in order to spur future development in this direction.

The Project will support the ITE as a resource centre for all stakeholders and a key institution providing quality support.

Strategic framework

The new Programme for Development of e-Government 2020-2022[28], aiming to "develop efficient and user-oriented government in a digital environment", set the framework for the project "Open Data for Sustainable Development". The Project will be instrumental in addressing some of the Programme's measures for open data ecosystem[29]. These measures are ensuring the implementation of the open data legal framework, improving the National Open Data Portal, supporting open data reuse, and introducing the concept of the "smart city" / eCity.

The Project is aligned with the national Artificial Intelligence (AI) Development Strategy for 2020-2025 which was adopted at the end of 2019, along with the Action Plan adopted in June 2020. The Strategy contains a specific measure focused on opening and reusing public sector data of significance for artificial intelligence[30].

Additionally, the newly adopted Public Administration Reform Strategy 2021 - 2030[31] prominently mentions open data and has one commitment which is devoted to the advancement of proactive publishing of data in public sector ownership. More closely, it is focused on awareness raising among management in institutions on benefits of transparency, open data and capacity building of their employees for open data and work on Open Data Portal.

The Project adopted a twofold approach to developing the open data ecosystem, specifically, supporting data owners and open data release, and simultaneously assisting with open data reuse and capacity development of users. The intervention will revolve around two aspects of the open data ecosystem -

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[28] Programme for Development of e-Government 2020-2022, http://mduls.gov.rs/wp-content/uploads/Program-razvoja-eUprave-u-RS-2020-2022.pdf?script=lat

[29] The Programme's specific objectives are: development of the infrastructure of e-government and interoperability assurance, improving legal certainty in the use of e-government, increasing the availability of e-Government to citizens and business sector through customer service improvement, and open data release in public administration.

[30] Artificial Intelligence Development Strategy in the Republic of Serbia for 2020-2050, measures 4.2 and 4.3 http://www.mpn.gov.rs/wp-content/uploads/2019/11/1-Nacrt-strategije-razvoja-ve%C5%A1ta%C4%8Dke-inteligencije-u-Republici-Srbiji-za-period-2020.-2025.-godine.pdf

[31] Public Administration Reform Strategy 2021 – 2030, http://www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/vlada/strategija/2021/42/1/reg

open data release and support to data owners on one hand, and open data re-use and capacity building on the other.

The overall objective of the Project is *"Improved level of accountability and transparency at all levels of government*[32]*"* The progress towards improved transparency and accountability will be measured through the European Commission Progress Reports and its assessment on progress in Accountability and the SIGMA's indicator on access to information of public importance.

The Project will include three interlinked outcomes:

Outcome 1: Enabling environment for implementation and coordination of open data initiatives created

The Project will work under this outcome to strengthen institutional mechanisms (capacities of the ITE and other organizations within the open data system), introduce sound capacity development system, and advance the legal framework for open data.

The Project will work on the ITE's staff's capacity building to push forward the open data agenda and provide different support options in data release and reuse. The ITE will be capacitated to support the implementation of "open-by-design" solutions, ensuring that all future information systems provide open data download by default. These results will further affirm the ITE's mandate for developing and implementing IT standards in state administration bodies and Government services.

Outcome 2: Increased the effectiveness of the governance systems and institutions in planning and implementing open-data policies and priorities

To increase the governance systems and institutions' effectiveness in open data practice, the Project will partner with the main national institutions from the public finance and environmental protection. The Project will follow a comprehensive approach starting by identifying challenges and assessing current situations and designing and implementing roadmaps to establish effective and sustainable availability and access to open data in these areas.

Simultaneously, the Project will continue to support data-driven solutions via different cooperation mechanisms, decentralize open data ecosystems, and spread the initiative across the country. All activities for data owners and data users will be available under one package – the Open Data Hub, an online network of services, community events and different stakeholders (hubs and similar spaces).

Outcome 3: Increased public participation in local government decision-making and oversight

Implementation of open data at the local level is inherently connected to increased public participation in local governance processes. This support will include an intervention for transforming data into machine-readable forms and enhancing information systems infrastructure to gather high-quality data. Under this outcome, the Project will provide a comprehensive capacity development support (e.g. peer exchange through a coordinated network, information and knowledge sharing). The Project will also continue to support champion cities, like the City of Nis and the City of Kragujevac. To enhance participation at the local level and monitor local governments' transparency and accountability, the Project will engage with other stakeholders in the open data ecosystem- civil society, tech and academic sectors as the main groups to use open data.

The Project will select local self-government units that have shown interest in joining the open data initiative (e.g. LSGs that participate in the National Open Data Portal or use open data practices).

Crosscutting principles of the strategy

As opening data leads to horizontal benefits in all aspects of a society, any open data initiative needs to be carried out with principles that allow it to reach its maximum potential in terms of impact. In the context of this project, the following crosscutting principles have been identified as highly relevant: 1) Good data governance; 2) Inclusion (gender and vulnerable groups); 3) Decentralization.

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[32] This is also one of the strtategic priorities of the Public Admnistration Reform Strategy 2021-2030

3 RESULTS AND PARTNERSHIPS

3.1 Theory of Change for the "Open Data for Sustainable Development" project
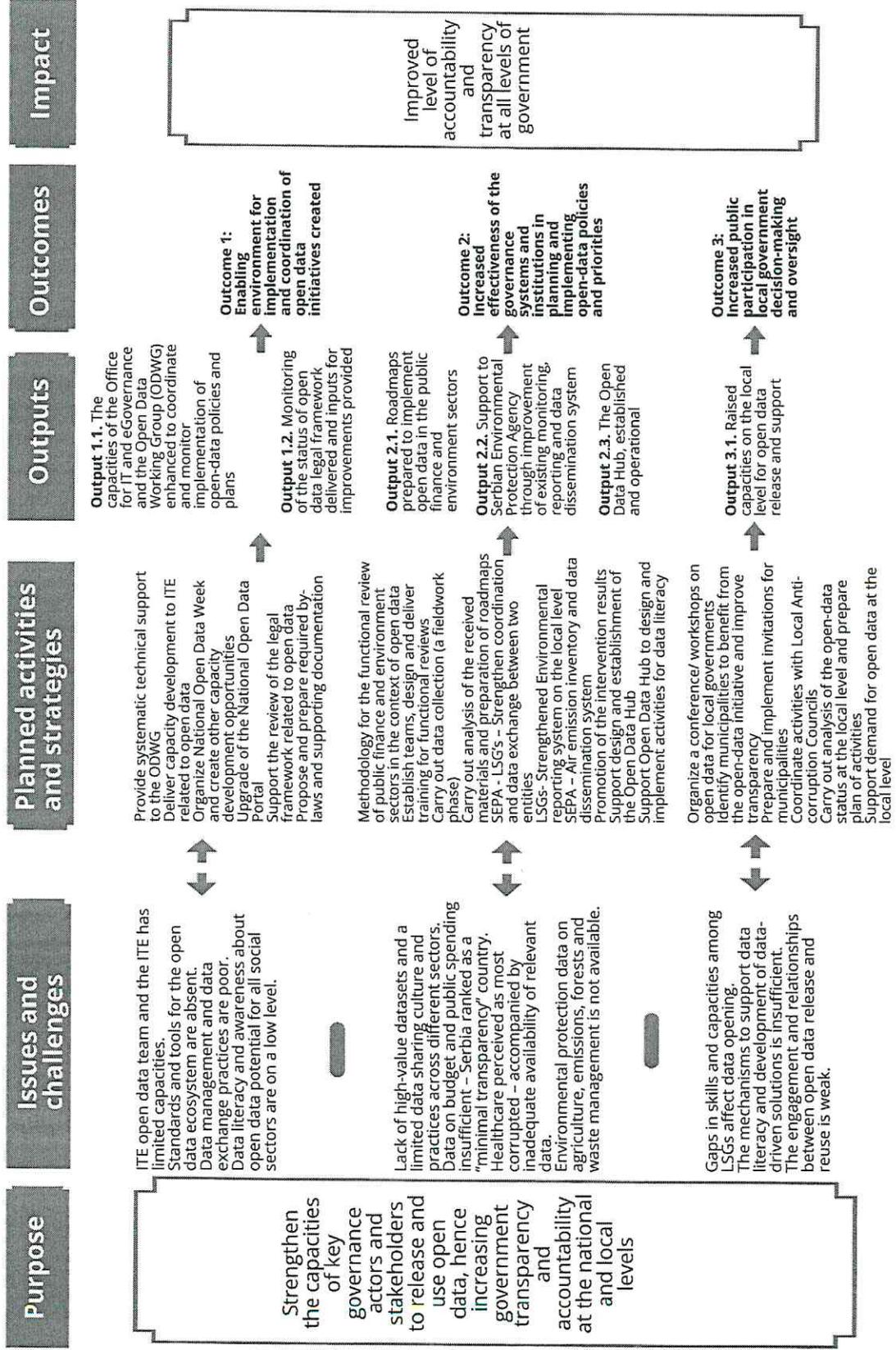
The Project's theory of change (TOC) is that if governance structures and public institutions at different levels are provided with the necessary tools to plan and implement open data policies, data-users across different sectors would be offered opportunities to benefit from data. Established partnerships for data release and data use and availability of data should be analysed constructively to result in improved governance for all Serbian residents.

- The beneficiaries of the project are: national and local governance level representatives, business sector (big companies as well as SMEs and startups), academic community, civil society, media, and citizens. Given the diversity of the beneficiaries, the data from areas of project intervention will play a different role in their ecosystems. The government should use data for policy and decision making, business sector for business development and competition on the market, academic community for research,, media for reporting and practising their watchdog role, and finally civil society and citizens for holding government to account and policy advocacy.

- Creating a favourable setting, including legal and policy frameworks, institutional cooperation and coordination mechanisms, for implementation of open-data actions is a prerequisite for sustainable changes and a more transparent and accountable governance system.

- Identifying bottlenecks in implementation of open data in public finance, environment and health as the core governance areas will give national partners the ability to increase the transparency and accountability if they are motivated to do so. In this context, support to the core institutions within public finance, health and environment systems to ensure access and quality of data to the public must be done in line with their mandates and in line with the legal provisions.

- Creating partnerships and strengthening networks of the data producers and data users is a precondition for evidence-based policy making. Also, working on the demand-side, specifically, increasing the understanding and development of capacities to use data is equally important, and represents a prerequisite for creating a sustainable open data ecosystem that benefits all stakeholders, improves how they work with data and raises the quality of the environments they work in (e.g. business environment for start-ups and SMEs).

- Sound examples of open data practices at the local level, applied in ways that show clear benefit to the local governments themselves, will prove appealing and durable, so that local self-governments continue to apply them. Availability and access to most critical data will increase opportunities for members of the public to participate in and evaluate decisions by local self-governments.

Overall, these results will lead to an increased ability of institutions and stakeholders at different levels to check the functioning of government actors. This TOC is also presented in the graphics in Figure1 below:

Figure 1: TOC for the Project Open Data for Sustainable Development

Purpose

Strengthen the capacities of key governance actors and stakeholders to release and use open data, hence increasing government transparency and accountability at the national and local levels

Issues and challenges

ITE open data team and the ITE has limited capacities.
Standards and tools for the open data ecosystem are absent.
Data management and data exchange practices are poor.
Data literacy and awareness about open data potential for all social sectors are on a low level.

Lack of high-value datasets and a limited data sharing culture and practices across different sectors.
Data on budget and public spending insufficient – Serbia ranked as a "minimal transparency" country.
Healthcare perceived as most corrupted – accompanied by inadequate availability of relevant data.
Environmental protection data on agriculture, emissions, forests and waste management is not available.

Gaps in skills and capacities among LSGs affect data opening.
The mechanisms to support data literacy and development of data-driven solutions is insufficient.
The engagement and relationships between open data release and reuse is weak.

Planned activities and strategies

Provide systematic technical support to the ODWG
Deliver capacity development to ITE related to open data
Organize National Open Data Week and create other capacity development opportunities
Upgrade of the National Open Data Portal
Support the review of the legal framework related to open data
Propose and prepare required by-laws and supporting documentation

Methodology for the functional review of public finance and environment sectors in the context of open data
Establish teams, design and deliver training for functional reviews
Carry out data collection (a fieldwork phase)
Carry out analysis of the received materials and preparation of roadmaps
SEPA - LSG's – Strengthen coordination and data exchange between two entities
LSGs- Strengthened Environmental reporting system on the local level
SEPA – Air emission inventory and data dissemination system
Promotion of the intervention results
Support design and establishment of the Open Data Hub
Support Open Data Hub to design and implement activities for data literacy

Organize a conference/ workshops on open data for local governments
Identify municipalities to benefit from the open-data initiative and improve transparency
Prepare and implement invitations for municipalities
Coordinate activities with Local Anti-corruption Councils
Carry out analysis of the open-data status at the local level and prepare plan of activities
Support demand for open data at the local level

Outputs

Output 1.1. The capacities of the Office for IT and eGovernance and the Open Data Working Group (ODWG) enhanced to coordinate and monitor implementation of open-data policies and plans

Output 1.2. Monitoring of the status of open data legal framework delivered and inputs for improvements provided

Output 2.1. Roadmaps prepared to implement open data in the public finance and environment sectors

Output 2.2. Support to Serbian Environmental Protection Agency through improvement of existing monitoring, reporting and data dissemination system

Output 2.3. The Open Data Hub, established and operational

Output 3.1. Raised capacities on the local level for open data release and support

Outcomes

Outcome 1: Enabling environment for implementation and coordination of open data initiatives created

Outcome 2: Increased effectiveness of the governance systems and institutions in planning and implementing open-data policies and priorities

Outcome 3: Increased public participation in local government decision-making and oversight

Impact

Improved level of accountability and transparency at all levels of government

3.2 Project intervention logic

The Open Data for Sustainable Development project is organized around three inherently interlinked outcomes, further planned through six outputs and numerous activities as presented in the Theory of Change.

More detailed description of implementation logic and planned activities are provided in the following paragraphs of this document.

Outcome 1: Enabling environment for implementation and coordination of open data initiatives created

- **Output 1.1. The capacities of the Office for IT and eGovernance and the Open Data Working Group (ODWG) enhanced to coordinate and monitor implementation of open-data policies and plans**

Activity 1.1.1. Provide systematic technical support to the ODWG

The Open Data Working Group (ODWG) was established to facilitate the implementation of open-data policies and maintain continuous communication with data holders and data users. The ODWG included key institutions for the implementation of the open data initiative, while the Office for IT and eGovernment has a coordinating role.

The Project will continue with capacity support to the ODWG in the priority areas of work. The assistance will address operational issues such as coordination meetings, inputs to discussions, identification of issues and best practices, maintain communication and cooperation within the group and with other stakeholders.

Besides, the Project will provide technical support in the areas such as monitoring of the implementation of the Open Data Action Plan, providing technical inputs on issues as arise, etc. The Project will advise on specific aspects of the open data program (including development of the legislative and institutional framework, addressing specific sectoral challenges, regulatory aspects such as anonymization, licensing, etc.).

Upon finalisation of the project, the Office for IT and eGovernment, as the coordinator of the ODWG, will fully take over handling of secretariat and technical functionality of the ODWG.

Activity 1.1.2. Prepare and deliver capacity development to the Office for IT and eGovernment (ITE) related to open data

The Project will carefully plan support program logically and clearly, and identify the kind of training for the employees of the ITE, combining workshop and seminar models. Workshop model will bring small group "learning by doing" process under the guidance of trainers with a focus mainly on skills. The seminar model will bring additional value through dialogue among the members of the group pursuing the development of personal knowledge and competences in the area of open data.

The process will begin and will be completed with an assessment of the current state of skills, knowledge, and abilities among them in the context of desired or necessary capacities to perform assigned responsibilities related to open-data. The difference between the current level and necessary situation will define the needs, purposes, and objectives of the capacity development. Training program will have a clear definition of the learning objectives, based on the priorities to be responsive, attractive, interactive, useful and leading to improvements.

It is planned to organize one specialized training program on open data for the ITE staff and also address coordination challenges and monitoring capacities of the ITE.

Activity 1.1.3. Organize National Open Data Week and create other capacity development opportunities related to open data

The Project will organize forums and workshops on open data - the intention will be to bring together different governance actors from the Government, the Parliament, independent and regulatory bodies, civil society organizations, think-tanks and other stakeholders. The main event will be the Open Data Week 2022, in the week of the International Open Data Day (first Saturday in March). The event will be implemented in partnership with local open data communities to ensure a wide reach throughout the country and achieve a decentralization of events. Open Data Week in 2019 attracted around 600 participants (57,3% of male and 42,7% of female participants). It is expected that a similar trend will continue in the future, with the targeted promotion working towards attracting more women in order to ensure a 50/50 split between men and women.

The ITE will be involved in the organization of the National Open Data Week, gradually taking the lead and responsibility, hence, setting the foundation for sustainability.

Activity 1.1.4. Upgrade of the National Open Data Portal

Besides regular maintenance of the National Open Data Portal further upgrades will require development of new harvesting modules for big data publishers and redesign in order to add a devoted page to the Open Data Hub.

Any major changes in design and interface of the National Open Data Portal will include a prior collection of users' opinions and key stakeholders' feedback through following a design thinking process.

- **Output 1.2. Monitoring of the status of open data legal framework delivered and inputs for improvements provided**

Activity 1.2.1 Support the review of the legal framework related to open data

This activity will be implemented in close cooperation with the Ministry of Public Administration, that is essentially responsible for preparation of the overall legal framework. The Project will provide technical support to the national partners to prepare the initial review of the legal framework relevant to open data, and the status of its implementation. The project will also include close cooperation with the Commissioner for Information of Public Importance and Personal Data Protection, in terms of addressing the complaint system for refused requests for data (procedure similar to requests for information of public importance). The Project will support monitoring of the Law's implementation, with a special focus on the right to reuse open data.

Activity 1.2.2. Propose and prepare required by-laws and supporting documentation

The completion of the legal reform will include preparation of one by-law supporting full implementation of open data activities at the national and local levels. The EU PSI Directive and other commitments of the Government of Serbia will be guiding the process.

The Project will provide technical expertise to the national partners to assess the impact of the laws, identify implementation challenges and propose adjustments and by-law that will facilitate implementation.

> **Outcome 2: Increased effectiveness of the governance systems and institutions in planning and implementing open-data policies and priorities**

- **Output 2.1. Roadmaps prepared to implement open data in the public finance and environment sectors**

The structure of an organization can be defined simply as the sum total of the ways in which its functions are divided into distinct activities that produce an output[33], and then its coordination is achieved among

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[33] "Rebuilding State Structure in South East Europe", UNDP Slovakia, 2003

these activities.[34.] Using as the framework open data requirement, the Project will support the Government of Serbia and other partners to carry out "system[35]" reviews.

Activity 2.1.1. Define methodology for the functional review of two sectors (public finance and environment) in the context of open data

The system review focuses on a comparative review of the common functions across a number of institutions, and thus will assess the ability of administrations to function as in integrated system. The common functions will be related to open data, and the review will be carried out across the public finance and environment sectors. It will include all relevant actors in a given sector, i.e. all subordinate agencies and public entities.

The focus of a system review is on the comparability in performance of analysed functions across different institutions. In particular, a system review of open data functions in the targeted sectors will seek to determine the extent to which the open data within different institutions is implemented and comparable. Some of the issues to reveal could be:

- Is there a department in the respective ministries in charge of data collection and publication or only a section within a department in others?

- What is the quality of data collected and published by the department in respective ministries and what political traction does the data have?

- If there is a difference in status, is it justified by differences in the size or complexity of the institutions?

- A system review allows for an examination of the equitability of staffing levels and staff quality for open data. How do the capacities to collect and publicize data differ between different institutions?

Activity 2.1.2. Establish teams, design and deliver training for functional reviews

The ODWG and the representatives from the members of the open data network from the respective institutions will form the main part of the teams for the (open data) functional reviews. Two sector teams will be considered; it is planned to organize parallel reviews.

Based on the previous experiences, it is recommended to consider a three-day event that will serve to present the methodology and the approach for the functional review in the context of open data, and introduce data collection tools and the overall analytical approach. The last day will serve for simulation of the functional review to clarify issues and challenges. It is planned to have a group of up to ten participants, in total up to 20 (two groups for functional reviews, with up to ten participants each).

Activity 2.1.3. Carry out data collection (a fieldwork phase)

The Project, in partnership with the national institutions, will distribute the questionnaires to the members of the team and ensure support during the initial phase. It will be necessary to interview officials and senior managers/ designated staff in each institution.

The public finance sector will have several components, based on institutions in charge for data:

- The Public Procurement Office: the review will be focus on the institutional structures to implement Open Contracting Data Standard (OCDS), to enable the disclosure of data and documents at all stages of the contracting process.

- The Public Debt Administration: the review will focus on the existing structures and software for open data from the Public Debt Management including data on central government debt,

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34 H. Mintzberg "Structure in Five: Designing an Effective Organization", Prentice-Hall Inc., 2003
35 Funkcionalna analiza- izdanja drzavnih institucija, UNDP/ Savet za drzavnu upravu- Vlada Republike Srbije, 2006 i Putokaz za Evropu (Roadmap to Europe - Functional Review of Central Support Functions), UNDP, 2005

local government debt, debt-to-GDP ratio, transactions in the reporting year, guaranteed liabilities, etc.

- The State Audit Institution: the review will focus on the availability of opinions from the audit reports and annual reports in the open data form.

- The National Bank of Serbia: this institution has relevant statistical data (monetary sector, statistics of other financial intermediaries, interest and exchange rates, international economic relations, real sector and fiscal sector), which will be focus of the review.

The review in the environmental sector will be focused on the key institutions:

- The Ministry of environmental protection: in charge of the overall environmental protection system in the country.

- The Serbian Environmental Protection Agency: which collects national datasets on issues such as air pollution, land and air quality.

- Local secretariats for environmental protection: these actors are crucial for a decentralized approach to opening environmental data in Serbia.

Activity 2.1.4. Carry out analysis of the received materials and preparation of roadmaps

This in-depth analysis will lead to the completion of reports that will reveal the steps required to introduce open data on strategic and policy levels, as well as on an operational level in these two sectors.

The Project will prepare roadmaps which will acknowledge the complexity of the public finance and environment sectors, and prioritize the datasets to be the focus of the intervention and recognize potential reuse benefits. Upon finalization of the roadmaps, at least one high-value dataset will be released and reused in order to showcase the benefits of open data for various stakeholders. Future iterations of the Project will work to implement more complexe steps and enhance availability and use of open data.

Starting with the environment sector, the project will provide support to SEPA, to improve their monitoring, reporting and data dissemination system, and release high-value datasets. In parallel, the project will facilitate a dialogue with the different stakeholders in order to recognize challenges and new opportunities in this area, which can be tackled through data usage.

In the public finance sector, the main focus will be on public spending data (both on the national and the local level of governance), also taking into account the insights from the roadmap. Potential issues in this area that can be addressed with open data are transparency, accountability and anti-corruption. A great portion of support will be devoted to follow up on the intervention with the PPO on public procurement data in the open data form, and inputs which OCDS can provide to raise the efficiency, effectiveness and competition in public procurement.

- **Output 2.2. Green data: Support to Serbian Environmental Protection Agency through improvement of existing monitoring, reporting and data dissemination system**

Activity 2.2.1. SEPA - LSG's – Strengthen coordination and data exchange between two entities

The goal of this activity is to prepare for changes in secondary legislation concerning the establishment of local registers of pollution sources that will allow more efficient cooperation and exchange of data between SEPA and LSGs. Also, the intervention will support SEPA in configuring the existing information system functionalities with an additional module, facilitating data exchanges, reporting and coordination among SEPA and LSGs.

The amendment of the legislation will be developed and adopted in the consultative process with the relevant state and local authorities.

One of the activity objectives is to reconfigure the existing National Register of Pollution Sources within SEPA, in terms of providing an adequate information system for collecting and processing the data

prescribed by local registers. Data collected through the newly implemented modules will be available to all local governments and will be a very good basis for the preparation of all planning documents on the local level, such as air and water protection, waste management, spatial plans, etc. During the implementation of this activity, collaboration between governmental authorities involved in environmental data collection and municipal services will be established.

The reconfigured module will be developed based on feedback from the pilot programme of capacity building for 15 local self-governments (from the activity 2.2.2). In the process of their capacity building, they will provide their suggestions, primarily related to the output forms that are relevant to them. It is important to state that the entry forms are legally prescribed[36] and cannot be changed. Following the completion of the project, the entire information system will be universal for implementation and will be accessible to all local governments in Serbia. The IT module reconfiguration will be located on SEPA premises. This component of the activity represents the extension and continuation of the projects implemented in the period 2010 – 2017, with SEPA as the main beneficiary. Those projects are: a) "Setting up the Environmental Management Center in Serbia", and b) "Monitoring of waste streams in the Republic of Serbia" .

Activity 2.2.2. LSGs- Strengthened Environmental reporting system on the local level

In accordance with the Law on Environmental Protection, SEPA collects data on sources of pollution for the National Register of Pollution Sources. According to the same Law, local governments are obliged to keep local registers of pollution sources. Currently, only several local registers have been established in Serbia, which are not regularly updated. It should be emphasized that the National Register does not overlap with Local Registers, rather they complement each other. The quantitative and qualitative lack of data inhibits the creation of informed decisions and implementation of evidence-based policy making.

The main objective of this activity is to raise the reporting capacities and awareness of the local self-governments (LGSs) in Serbia on emissions and waste generation, and management data collection, enabling them to comply with their legal reporting obligations towards SEPA. This will be implemented through training and mentorship. As the outreach is large, the objective will be achieved by supporting SEPA to create capacity building programme for LSGs on LSGs' reporting obligations towards SEPA, training for SEPA staff and supporting them to further on train LSGs.

A needs assessment will be conducted prior to the launch of the capacity building programme, feeding the programme materials and approach. The capacity building programme will be implemented in two phases. The first phase will include the training of the SEPA staff, with a focus on the new modules for reporting (to be introduced in the scope of this intervention) in the National Register of Pollution Sources, and their coordination with the LSGs. The second phase will include trainings for LSGs, starting with a pilot for 15 LSGs from across the 5 regions in the state – Central Serbia, South Serbia, West Serbia, East Serbia, and Vojvodina (3 LSGs per region). The same training programme will then be scaled to 145 LSGs in Serbia. Ten one-day trainings will be organized in each region. In order to ensure a tailor-made approach and 1 on 1 learning sessions, only 3 LSGs will be present in each training (i.e. representatives of the LSGs, which includes staff working on the reporting of pollution, staff of the Public Utility Services, and environmental inspectors). In total, 50 trainings will be organized (10 per region), for at least 200 participants overall. Prior to the training and upon its finalization, participants will need to pass the entry and the final knowledge test, enabling the evaluation of the training program and its efficiency. Additionally, in order to ensure the sustainability of the capacity building programme, training materials will be adapted as an online course on the platform of the National Academy for Public Administration. The course will be available to LSG employees in the future, creating an opportunity for smoother onboarding.

Additionally, in order to scope all local effects and sources of pollution, emissions of a number of pollutants originating from road traffic need to be calculated, since those datasets are not available.

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[36] Pravilnik o metodologiji za izradu nacionalnog i lokalnog registra izvora zagađivanja, kao i metodologiji za vrste, načine i rokove prikupljanja podataka

Within local registers, data are mostly obtained from point sources, except for farms, which are treated as area sources. However, besides point and area sources, road traffic has significant impact on air quality, especially considering the emissions of some pollutants, such as nitrogen oxides, where road traffic is one of the most important sources. Using the model of the European Environment Agency under the name COPERT ver.5, emissions of a number of pollutants originating from road traffic can be calculated. Using this approach, a more complete picture of the state of air quality in an area will be obtained. Together with activity 2.2.3., where grid data needs to be developed, all local effects and sources can be identified.

Activity 2.2.3. SEPA – Air emission inventory and data dissemination system

The goal of this activity is to establish an air emission inventory and data dissemination system/portal with a Geographic Information System (GIS) component within the existing SEPA IT platform, which are currently lacking. This Portal will be used for dissemination of data on air emissions at the national and international levels, based on UNECE PRTR Protocol , UNECE LRTAP , and UNFCCC conventions, as well as EU E-PRTR and the IED Directive . The goal is to establish an efficient and user-friendly information system and Internet Portal based on best international practices (i.e. UK National Atmospheric Emissions Inventory (NAEI)) for transparent data communication towards government, international organisations, and citizens, which would be in line with the Aarhus Convention adopted by the Republic of Serbia. The activity will include the establishment of the GIS component for presentation of collected and harmonized data to the public, and implementation of LRTAP and UNFCCC convention requests thanks to the development of the grid data module.

Finally, the data from the information system (data on existing emissions pollutants - air, water, waste) will be presented in the form of open data, on the SEPA open data portal and the National Open Data Portal.

Activity 2.2.4. Promotion of the intervention results

The promotion of the activities and the results would last throughout the whole intervention, focusing on: 1) posters for LSGs which explain their reporting responsibilities, to be displayed in the respective LSG offices; 2) presentation of the results to the relevant stakeholders – SEPA employees, the Ministry for Environmental Protection, other relevant government institutions on the national and local level, the donor community and international organizations, private sector companies contributing to pollution in Serbia, media, and citizens (5 promotional events will be organized); and 3) media promotion (including online and traditional media).

- **Output 2.3. The Open Data Hub, established and operational**

Activity 2.3.1. Support design and establishment of the Open Data Hub

The Project will assist with establishing the Open Data Hub as an ITE-led initiative, as a cooperation mechanism to connect data owners and data users and increase the visibility of open data importance and benefits among a wider stakeholder group.

The assistance will include a proposal for the Open Data Hub design as an online space, a network of different stakeholders, services and community events. The previous phase of the project helped test different activities and tools for creating and incentivizing a diverse group of stakeholders, as well as establish lessons learned that can improve the Serbian open data ecosystem. The Open Data Hub would provide a consistent resource and communication channel for the whole open data ecosystem and help it grow consistently, which was what the previous project lacked. For example, the Open Data Guide developed through the previous project was accessed almost 1000 times, but 61% of these visits came from the capital city. The Hub would build on what the previous project created, namely the tools (such as the Open Data Guide), initiatives (Open Data Week) and the established community, but with the aim of decentralizing and empowering a wider group of stakeholders.

Some of the already identified partners could be Nova Iskra, Impact Hub, ICT Hub, Startit (with a network of 7 hubs across the country), Infostud Hub in Subotica, Deli space in Nis, Start-up centre Nis,

etc. The goal is to decentralize the open data ecosystem and spread the initiative to different cities across Serbia. The goal in designing the Open Data Hub will be to attract different stakeholders, ranging from media and CSOs to start-ups and SMEs, who can work together to use open data to improve their initiatives, products and services. In this context, for example, the expectation is that private sector stakeholders working with open data will contribute to a more innovative and resilient business environment.

Activity 2.3.3. Support Open Data Hub to design and implement activities for data literacy

The Open Data Hub will have an important role in supporting data literacy and capacity building for various stakeholders. The Project will assist to design different online and offline tools. In this context, data literacy will be built through technical and legal consultations for the community, organization of trainings and workshops, with a possibility of developing video and print tutorials, as well as other similar tools in the future iterations of the project.

Also, the Open Data Hub will prepare promotional stories, blogs, live talks, podcasts and similar less-informal promotional tools to capture the professional and institutional changes in institutions that are implementing open data programs.

Outcome 3: Increased public participation in local government decision-making and oversight

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- **Output 3.1. Raised capacities on the local level for open data release and support**

As outlined in its Public Administration Reform Strategy, the Government of Serbia has recognized the need to depoliticize and increase citizen participation in public administration, by strengthening its transparency and integrity[37]. Currently, there is limited public information and dialogue on the workings of local authorities. For example, insufficient data are available on the decisions of local assembly and mayor's office, municipal budgets (equally, income and expenditure sides) and other administrative procedures and proceedings. These factors are affecting transparency and opportunities for more active participation and oversight of citizens.

Activity 3.1.1. Organize a conference/ workshops on open data for local governments

The Project will in partnership with the National Alliance for Local Economic Development (NALED) and Standing Conference of Towns and Municipalities (SCTM) organize a conference for local authorities on open data. This will serve to establish horizontal network for information and knowledge sharing. The Project will invite champion cities, like the City of Nis or the City of Kragujevac, to present their experiences. The Project will offer opportunity to present experiences from other cities, with a solid basis for concrete and fast actions in open data release.

Also, the conference will serve to present the importance of broader participation, especially civil society, tech and academic sectors, as they present the main groups to use open data once it is available. The feedback loop will ensure stronger ownership in the community, as well as better connection among data owners and data users.

Activity 3.1.2. Identify municipalities to benefit from the open-data initiative and improve transparency

The Project will work with the national partners to define clear criteria for the selection of municipalities to benefit from the open-data initiative by developing open-data plans and implementing them.

The Project will prioritize municipalities with adopted local anti-corruption plans (as part of the Chapter 23 Action plan) and established Local Anti-corruption Councils as the basis for further work on increasing transparency. The Project will analyse other local-level indicators (such as Local Transparency Index of Transparency Serbia; good governance index of the SCTM and NALED regulatory index of Serbia).

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[37] Public Administration Reform Strategy, http://www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/vlada/strategija/2021/42/1/reg

Activity 3.1.3. Prepare and implement invitation for municipalities

The Project, in partnership with the Ministry of Public Administration, Standing Conference of Towns and Municipalities and the National Alliance for Local Economic Development, will invite municipalities to participate in the open-data initiative. Municipalities should prepare an expression of interest in collaboration with the Project on open data activities- this expression of interest will serve to confirm an explicit and strong commitment of municipal authorities to embark on this transparency initiative and open critical data.

The commitment that the LSGs is highly important, as it will indicate the kind of assistance and the areas in which open data activities will be implemented.

Activity 3.1.4. Coordinate activities with Local Anti-corruption Councils

There are a number of donors involved in support to local governance in Serbia. The Project will begin meeting and networking with other development partners and the members of the Local Anti-corruption Councils to establish a pattern of collaboration and good relations. Working with the local anti-corruption councils will ensure coordination of efforts, as well as contribute to sustainability of results. Participation of municipal technical and IT staff might be required.

Activity 3.1.5. Carry out analysis of the open-data status, especially in the core areas, at the local level and prepare plan of activities

The Project will work to identify the current situation with an application of open data in the respective municipalities and identify needs for improvement and further advancement. The Local anti-corruption councils and technical staff from municipalities will, with support from the Project, carry out the initial analysis and identify issues and challenges for open data approaches.

The Project will assist the preparation of a plan of action for each of the participating municipalities and provide follow up assistance, from capacity development to software solutions. The objective is to ensure the availability of open data in the priority identified areas.

Activity 3.1.6. Support demand for open data at the local level

Simultaneously to the activities at the level of local authorities and Local Anti-corruption Councils, the Project will work on enhancing the demand side. This will be done through different on-line presentations, discussions and other networking activities. On-line capacity development tools and training programs will be prepared and shared with the stakeholders at the local level to enable their participation and use of open data. Main stakeholders for these activities are representatives of the local tech and entrepreneur community, local media outlets focused on investigative journalism, representatives of the academic community (if a university is present in the LSG), citizens and local CSOs. These stakeholders were already scoped in the previous project through a public call for small scale funds to organize local events for the Open Data Week 2019, however the project will always organize a public call for participation in the training programs, in order to provide an opportunity to map new stakeholders in the ecosystem. Based on the presence of local stakeholders in the previous Open Data Week, it's expected that at least 400 participants will be engaged overall. In the long run, these activities should contribute to a more active local community and more transparent local authorities.

3.3 Monitoring and evaluation of the project

Monitoring of the project's impact will be implemented through tracking of the indicators of the Impact Assessment Study developed through the previous phase of the open data project. In addition, the project will include regular quality assurance and a final evaluation performed by an external evaluator.

3.4 Partnerships

The Office for IT and eGovernment is the key partner for the project.

3.5 Risks and Assumptions

Risks have been assessed and analysed in the annexed risk log.

3.6 Stakeholder Engagement

Key stakeholders have been gathered in the ODWG and through other project activities thus far:

- Office for IT and eGovernment
- Data owners (open data champions on the national and the local level, as peer support to new data owners joining the open data movement and the line ministries and related institutions in the areas of public finance and environmental protection, especially SEPA)
- Civil Society Organisations (including network of supported grantees through the previous project)
- Tech communities (Data Science Serbia, Digital Serbia Initiative, Heapspace)
- Academia (assistant professors and students engaged in the capacity building activities)
- Business sector (big data producers, awardees of the open data challenge and other included stakeholders).

Target groups: Apart from the abovementioned stakeholders, the project will engage a wider community – more representatives of private companies/SMEs, start-ups, the media, and the research/wider academia community. All the activities implemented through the Open Data Hub will target a wider community, ensuring that new and emerging stakeholders are recognized and included in the project activities.

Other Potentially Affected Groups: Specific activities designed to develop data skills and translate released open data into concrete solutions serving citizen needs (such as Open Data Challenges and similar support mechanisms for development of data-driven public service apps) will seek to link open data with defined developmental priorities and gaps in service provision. These activities will prioritize the participation and the needs of women and vulnerable groups (e.g. persons with disabilities), with at least 50% participation of women in all activities.

3.7 Regional and worldwide cooperation

The project will continue to nourish already established cooperation with the regional and global stakeholders in the field of open data. In the previous period, the project had strong cooperation with the UNDP Istanbul Regional Hub (IRH), which facilitates many activities in the South-East Europe in the field of open data, working also with other UNDP offices in the region. This cooperation resulted in additional funds for the intervention related to OCDS with the Public Procurement Office, received by UNDP Serbia in 2019. Also, some UNDP offices in the region (Bosnia & Herzegovina, North Macedonia), are working in the field of open data, which presents a good opportunity for cooperation.

On a global level, the project established good cooperation with the Open Data Institute (international NGO helping the UK government and governments around the world in open data ecosystem building), which can be useful as a resource for learning and peer exchange, if planned according to the needs of the project in the future. The Office for IT and eGovernment will sign a Memorandum of Understanding with the Government Digital Service (in charge for open data policy in the United Kingdom), which ensures framework for future cooperation and peer learning. Cooperation will be sought with the UNDP Accelerator Labs global network and UN Global Pulse in establishing the Open Data Hub. Future learning activities should include good practises from abroad, with prior detailed design of such activities and good selection of possible learning cases.

The project will also collaborate with the Global Data Barometer, a world-wide initiative to map out the quantity, quality and impact of open data in specific and government data in general. Given that UNDP Serbia has the role of the regional coordinator for the Global Data Barometer assessments for Serbia, North Macedonia, Bosnia and Herzegovina, Montenegro and Turkey, this represents an opportunity to

create strong regional cooperation, exchange best practices, share resources and enhance the regional open data ecosystem.

3.8 Sustainability and Scaling Up

Previously implemented activities in the open data field in Serbia, starting from 2015, have moved towards ensuring the sustainability of the intervention. Open Data is regulated through the legislative framework in Serbia and is part of the strategic framework – not only in the Programme for Development of e-Government, but also in other strategic documents (e.g. Action plan for implementation of the Strategy for development of public procurement in Serbia). The Office for IT and eGovernment is funded by the Government of Serbia, and was established in 2017, with strong support from the Prime Minister's cabinet, which creates potential for open data to find prioritized spot on the political agenda. Even in the case of personnel turnover after the elections, the activities implemented thus far have ensured that this process is ongoing and unlikely to stop at this point. The community of open data stakeholders has become much stronger and more vital, taking ownership from the project and advocating for open data bottom-up, seeking higher standards with respect to open data management.

Funds for the core activities of the open data initiative (support to data owners in terms of data release and implementation of the Law on e-Government, National Open Data Portal maintenance, and support to the community of users through Open Data Hub) will be ensured in the state budget for 2021, thus providing the sustainability for these activities.

Compared to the previous project, in this project the local level will be included as much as the national level of intervention. To some extent, the project has become a driver of broader digital transformation, with potential for greater impact. Another project running in parallel, Digital Transformation – Serbia at your fingertips, provided many opportunities for interconnectivity, creating a significant impact of the project in terms of modernizing data management in the government.

When it comes to the new phase of the open data project, scaling up can be envisaged in several directions, running in parallel:

- **Open Data feeding economic development:** Through the Open Data Hub, the importance of data-driven decision making and using alternative data sources will be further explored as resource for private sector development and economic growth. High-value datasets are recognized as catalyst for economic development with high commercial potential and a powerful tool for opening markets to new and diverse competitors.

- **Intervention within public finance and environment sectors as a model for other sectors**: this phase can create a model for deeper intervention within selected sectors, and the key ingredients for that intervention, which could be afterwards scaled to other sectors as well, primarily health and business environement (assuring the tailor-made approach for each sector and institution). The intervention related to SEPA is of particular importance given that environmental data impacts all sectors of Serbian society. Even though each sector has its own specifics and different possibilities and constraints, scaling up will be possible and presents important know-how for future success.

- **Open Data feeding the Smart City Strategic approach:** more and more cities in Serbia are experimenting with the smart city concept, and piloting initial activities at the local level. Some, like Kragujevac for example, have a dedicated person for the Smart City initiative. This trend shows potential for growth, where data will play a significant role, as an input for concrete steps, and smart solutions that lead to high impact of open data while protecting the privacy of citizens. As support for the first steps in the experimentation processes with the smart city concept, the project will create a solid basis for local self-governments to enter these processes and create synergy with Government activities in this area.

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- **Local solutions scaling up and out:** solutions developed on the local level can scale up to improve bigger systems or cover a wider geographic area/larger population case. Also, the project can be scaled out by being repeated with other LSGs in Serbia in the future, either with the support of the project team or run by the LSGs themselves.

- **Regional dimension:** a regional approach to open data is still in a very early stage, however the project has already shared know-how in the region (e.g. starting of the open data initiative in Republika Srpska, Bosnia & Herzegovina). Also, the Western Balkans Digital Summit (WBDS), which was organized for the second time in 2019, presents a valuable opportunity for creating a regional approach and enabling discussion about open data. WBDS 2020, scheduled to take place in Albania, was postponed due to COVID-19, but the digital cooperation will be on the regional agenda. New regional activities, expected to be launched in this year's WBDS (e.g. Memorandum of Understanding connecting Western Balkans Open Data Portal and building on the Regional Research and Development Cloud), are postponed, however will take place in the near future. The Global Data Barometer efforts will also enhance regional collaboration between existing open data actors.

The project will take into account lessons learned in the previous phase, especially in terms of better communication of the project results and increased and consistent visibility, stronger ownership of the Office for IT and eGovernment (which will significantly contribute to the sustainability of the open data initiative as a whole), and better structured support to the community of users (going beyond existing monitoring procedures to provide more expert, technical and management support throughout the process of project implementation / funds utilization).

3.9 Lessons learned

1) Visibility of the open data initiative

The project established a presence both in traditional and non-traditional media. However, in most cases, the approach should have been better coordinated, with concrete goals and messages which should be agreed among all partners. Also, media presence should move beyond immediate results, and present stories around open data and other aspects of life, including different social problems (such as the question of air pollution, for example). This will help in bringing the subject of open data closer to the citizens and increase the visibility of the project wider than the "usual suspects", already included in the project. Greater visibility will also help with more inclusion of new stakeholders in the project. In order to address visibility issues in the future, the project should engage an expert, who will help with the communication strategy development and execution, following the input of the project team and partners. The communication expert will work closely with the designated communication experts from the UK Embassy and government counterparts, to define communication strategy, main communication messages and campaigns. In order to reach the general public at a larger scale, the project will put more focus on traditional media. Additionally, local media will be targeted as well, to promote events as well as activities and results achieved at the local level, in selected LSGs.

2) Open data demand and supply

Currently published open data is mostly based on the assessment of the concrete data owners about which datasets can be released as open data, without prior consultation with the potential data users. In order to stimulate further development of the open data ecosystem, data owners and users should be brought together more often, apart from the Open Data Working Group, as a communication platform. Such opportunities would inspire data owners to think outside of their everyday box and create more trust among data users into the potential of the public sector to further contribute to the growth of the open data ecosystem and bring in new valuable datasets. Of course, only if followed by concrete action, which should be stimulated and supported by the project.

3) Inclusion of a wider group of stakeholders

The project managed to include various target groups and relevant stakeholders. However, the project could benefit from the inclusion of actors beyond the already familiar ecosystem, which would provide valuable feedback for future development of the open data ecosystem - how can data support resolving the problems of various groups, how can data answer some of their needs, and similar angles which should be taken into account. In the new phase of the project, the project team will work towards a more systematic approach to the inclusion of a wider group of stakeholders, with a special focus on local groups, and the project scaling to the local level. Project should put more focus on inclusion of the academic community, local CSOs and bigger tech companies in the country.

2) Release of high-value datasets

According to the EU Directive on open data and the re-use of public sector information, high-value datasets have a high commercial potential and can speed up the emergence of value-added EU-wide information products. They will also serve as key data sources for the development of Artificial Intelligence (AI). Having in mind the future development of the open data ecosystem in Serbia, and the desired AI development, Serbia should also move forward with the release of high-value datasets. The thematic categories of high-value datasets are: Geospatial, Earth observation and environment, Meteorological, Statistics, Companies and company ownership, and Mobility. Progress has been made with the Statistics and some datasets on environment. The next phase will push for more high-value datasets, with a focus on public finance and environment.

3) Better implementation of the Law on e-Government

The Law on e-Government was adopted in April 2018 and introduced the right to open data into the Serbian legislative framework. Following its adoption, the Office for IT and e-Government organized a cycle of trainings for national bodies and LSGs in order to promote the new legal framework and give guidance in its implementation. To enforce the law implementation further, with more success, the project will stimulate open data demand.

6) Scaling of the Open data initiative

Most of the activities of the first phase of the open data initiative were implemented on the national level, with a focus on large data publishers. As the activities were rolling out, and the project established a greater presence at the local level, possibilities to pick up valuable results and datasets started to increase (budget, public transport, etc.) paving the way for future interventions. Having this in mind, this project will build on these previously achieved results and scale activities on the local level, both in terms of data release and data reuse.

7) Wider context for open data

Building of the open data ecosystem from zero required a wide-scope approach, with a focus on stimulation of data release and reuse, accompanied by the development of ITE capacities. Within several years of implementation, open data became more contextual, feeding different processes and projects, with new stakeholders and new approaches. The project team recognized that open data should be taken to the next level, as an input and a component for bigger concepts (e.g. smart city). Having this in mind, the project will partner with MPALSG and other relevant stakeholders and explore the links between smart city and open data, and relevant aspects of that relationship, including data privacy, open source software, and citizen engagement.

4   PROJECT MANAGEMENT

Cost Efficiency and Effectiveness

The proposed project strategy takes into account UNDP's previous experience in the implementation of the national open data initiative, and regional and global experience with implementing open data initiatives to deliver maximum results.

UNDP, in partnership with the Office for IT and eGovernment, has successfully implemented the "Open Data – Open Opportunities" project from 2017 to 2020, and will heavily utilize the experience and lessons learned from that period. Apart from previous partnerships and networks relevant for open data, where UNDP had a coordination role (e.g. Open Data for Development program, the Open Data in Europe and Central Asia platform), UNDP will harvest partnerships established in the previous project (e.g. Open Contracting Partnership, Open Data Institute and Open Data Leaders Network, etc.). Also, as Office for IT and eGovernment will have signed Memorandum of Understanding with the UK Government Digital Service, the project will utilize that relationship and resources available.

When it comes to IT and digitalization, UNDP is a very well-established player both nationally and in Europe and CIS region, with many tech related initiatives being implemented by country offices in that region. Going back to Open Data Readiness Assessment and up to most recent results and support from UNDP Istanbul Regional Hub, **UNDP can utilize partnerships and experiences already acquired, without investments in external expertise.** In Serbia, UNDP has forged strong partnerships related to open data (we have worked individually with all agencies that are part of the Open Data Working Group, cooperated with the data science community, tech sector, civil society and the start-up community). UNDP will fully utilize its coordination role, with more capacitated national counterpart (Office for IT and eGovernment). Our manner of work calls for demand-driven and full national ownership, secures sustainability and full utilization of domestic resources. Additionally, UNDP will rely on its Accelerator Lab and their expertise when it comes to small-scale innovative pilots, which will used to test and evaluate new mechanisms for the implementation of certain activities.

In its approach, UNDP relies heavily on national capacities and uses its 'national implementation modality' where possible, where government procedures and capacities exist and are used for implementation of activities. Apart from contributing to sustainability of results, such an approach decreases operational costs, but ensures a robust monitoring and assurance of both financial and operational performance.

On an impact level, open data is expected to contribute to greater effectiveness and efficiency of Government operations, as well as to new economic opportunities and growth. Recent studies suggest that open data marker size in 2019 was 184.45 billion euros, and the estimates for 2025 go between 199.51 - €334.20 billion euros.[38] Macro-economic estimates of the potential value of open data arrive at 1-2% of GDP[39], which would mean for Serbian 2019 GDP[40] an open data potential of 459 to 918 million euros. In addition, since some of the most obvious savings are made through greater transparency of financial data, the project includes a strong component on open data in public finances.

Project Management

A portfolio management approach is foreseen for implementing the proposed activities, in order to improve cost effectiveness by leveraging activities and partnerships with other initiatives and projects.

Project management will be seated at the UNDP Serbia office. The project is a part of the Good Governance portfolio at UNDP Serbia and will rely on synergies with other associated initiatives (e.g.

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[38] The Economic Impact of Open Data , European Data Portal: https://www.europeandataportal.eu/sites/default/files/the-economic-impact-of-open-data.pdf
[39] Creating Value Through Open Data, European Data Portal,
https://www.europeandataportal.eu/sites/default/files/edp_creating_value_through_open_data_0.pdf
[40] Based on estimations of the National Statistics Office: https://publikacije.stat.gov.rs/G2020/Pdf/G202017013.pdf

Advancing Accountability in Public Finances, the parliamentary portfolio, and the range of projects contributing to public administration reform), as well as coordination with other program clusters where open data will be mainstreamed (e.g. Climate Change, Resilient Development, etc.). Given the focus on public finance and the local level, the project will establish special synergy with the Public Finance Portfolio and Local Democracy Portfolio, in order to ensure wider approach, sustainability and success of the activities.

The project will have a coordinated approach to relevant national partners and in particular local communities, to ensure best value for money and to avoid duplication.

Value for money

When it comes to value for money, indicators in the Results Framework and the project budget are driven by the 4Es (equity, economy, efficiency, and effectiveness).

In terms of **equity**, the project will go towards ensuring at least 50/50 split in participation of men and women in all capacity building activities, and will measure the percentage of positive feedback from women and vulnerable groups on activities which include development/provision of innovative services. Additionally, the project will support development of data-based solutions by women and vulnerable groups. In terms of **economy**, the project budget will be developed in detail, and provide overview of cost per input. When it comes to **efficiency**, upon finalization of the project, it will be possible to measure if the intervention has managed to deliver outputs in a timely manner, and in line with the expected targets given in the Results Framework. The same applies to **effectiveness**, in terms of measurement if the outputs have contributed to achievement of the project outcomes.

The Value for money coefficient in the previous open data project was estimated as high by the independent evaluator, which was also confirmed by the donors. Building on the previous phase, the project will expand the created network, partnership base, with raised ambitions in terms of expected achievements. The project will perform an intervention on a deeper level, both on the national and the local level, ensuring long-lasting impact. Each of the proposed activities is part of a wider program, constructed to create engagement of all relevant stakeholders, using a tailor-made approach.

All the activities are designed in accordance with the needs recognized in the previous open data project, using the approach and mechanism most suitable for the beneficiary. The project recognizes two main group of beneficiaries – data owners and data users. The implementing partner, the Office for IT and eGovernment, is also recognized as a beneficiary of the horizontal stream of outputs. Based on the lessons learned and previous experience, the project has a good overview of the needs of beneficiaries and has created tools to address them. Several activities are also designed in order to map the needs of the beneficiaries, presenting the foundation for future activities (e.g. roadmaps). All the activities will meet the needs of the beneficiaries in greatest possible degree.

The project recognizes the following major assumptions: political stability in the country, institutional strength of the implementing partner, support of the government for open data and moderately developed community of open data users. When it comes to the political stability in the country, elections are frequent, and polls often predict minor changes in the government and the parliament. Turnover of personnel is possible, but the previous project has already successfully faced similar challenges, due to strong and already established partnerships. Institutional strength of the implementing partner has been built over the previous open data project, which holds a key role in digitalization processes in Serbia. The Covid-19 pandemic has shown a greater need for digital tools and services, fed by good quality data. At this point, it is unlikely that the government will change orientation against digital transformation, so the support is likely to continue. The Programme for the Development of e-Government 2020-2022 was adopted in the beginning of June 2020, ensuring future efforts in this area. The previous project has also secured that the community of users goes beyond those supported by the project, which became visible immediately after the project's closure, when the community demanded open data on COVID-19 and used it for various visualizations and investigative journalism.

5 RESULTS FRAMEWORK[41]

Project title and Atlas Project Number: **Open Data for Sustainable Development**
Intended Outcome as stated in the UNDAF/Country [or Global/Regional] Programme Results and Resource Framework: All people benefit from effective governance and meaningful civic engagement
Outcome indicators as stated in the Country Programme [or Global/Regional] Results and Resources Framework, including baseline and targets: *Indicator: Government Effectiveness Estimate*   Baseline (2018): 0.11; Target: 0.45 by 2025   **CPD Output 1.3: Digital transformation of public administration accelerated**   *Indicator: User centricity of eGovernment services score*   Baseline (2018): 68; Target: 74 by 2025 (Data source, frequency: eGovernment Benchmark report, annually)   *Indicator: Accessibility of public services indicator value*   Baseline (2019): 3; Target: 4 by 2025 (Data source, frequency: SIGMA Monitoring Report, annually)   Impact Indicator: Indicator: Government Effectiveness   Baseline (2019): 53.37; Target: 58-59 by 2023, 59-60 by 2024 (Data source, frequency: World Bank Group Worldwide Governance Indicator, annually)

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[41] UNDP publishes its project information (indicators, baselines, targets and results) to meet the International Aid Transparency Initiative (IATI) standards. Make sure that indicators are S.M.A.R.T. (Specific, Measurable, Attainable, Relevant and Time-bound), provide accurate baselines and targets underpinned by reliable evidence and data, and avoid acronyms so that external audience clearly understand the results of the project.

Applicable Output(s) from the UNDP Strategic Plan:

Output 2.2.1 Use of digital technologies and big data enabled for improved public services and other government functions

EXPECTED OUTCOME	OUTCOME INDICATORS	DATA SOURCE	BASELINE Value	BASELINE Year	TARGETS (by frequency of data collection) 31/03/2022	DATA COLLECTION METHODS & RISKS
Outcome 1: Enabling environment for implementation and coordination of open data initiatives created	• Increase in the users of the Open Data Portal	Government of Serbia Open Data Portal	7213	2021	15%	Open Data Portal Analytics
	• Increase in percentage of female users		59,2 %		20%	
	• Increase in percentage of users using the open data-based services who are from vulnerable groups (including people with disabilities)					
	• The extent to which the open-data framework has been functional (complaint system for data requests improved)	EC Progress report and other relevant third-party reports (e.g. Open Data Maturity Report)	partially	2021	Consultations held and draft document created	Observation
	• Improved business environment	Doing Business score	75.7	2021	76.7	Observation
	• Government funding for the Open Data Working Group (post-donor support)	Government of Serbia	No	2021	Yes	Observation
Outcome 2: Increased effectiveness of the governance systems and institutions in planning and implementing open-data policies and priorities	• Open Government Data Index (OGDI)	UN E-Government Survey	0.8479	2020	0.88	Observation
	• On-line services index	UN E-Government Survey	0.7941	2021	0.81	Observation
Outcome 3: Increased public participation in local government decision-making and oversight	• Local Transparency Index score – all municipalities and targeted municipalities	Transparency Serbia	46	2020	50	Observation

EXPECTED OUTPUTS	OUTPUT INDICATORS	DATA SOURCE	BASELINE Value	BASELINE Year	TARGETS (by frequency of data collection) 31/03/2022	DATA COLLECTION METHODS & RISKS
Output 1.1. The capacities of the Office for IT and eGovernance and the Open Data Working Group (ODWG) enhanced to coordinate and monitor implementation of open-data policies and plans	• Number of capacity building activities on open data for Office for IT and eGovernment staff	Training programs, Participation sheets	0	2021	1	Observation
	• Total number of participants in capacity-building activities (and percentage women)				10 (40% women)	Observation
	• Number of participants who pass test on open data at the end of capacity-building				90%	Test results
	• Number of meetings of the Open Data Working Group held per period with participation from all key institutions and with senior stakeholders from each	Participation sheets, Minutes of the ODWG meeting	1	2021	2	Observation
	• Proportion of participants who are senior stakeholders and female or from a vulnerable group				35%	
	• Extent to which implementation of the open data legal framework is advanced: - some extent: training for implementation of the legal framework implemented - great extent: demand for open data increased (at least 20 requests) - fully: complaint system for data requests fully in place	Some extent: Participation sheets from trainings and meetups of data owners and users, Great extent: Number of requests for data, Fully: legal framework amendment	Not at all	2021	To some extent	Observation

Output / Indicator	Means of verification	Baseline	Year	Target	Observation
• National Open Data Week organized once annually (yes/no)	Agenda, Participation Sheets	0	2021	Yes	Observation
• Number of participants in the National Open Data Week				600	
• Percentage of participants who are female or from vulnerable groups				25%	
• Percentage of participants who provide positive feedback on the National Open Data Week				75%	
Output 1.2. Monitoring of the status of open data legal framework delivered and inputs for improvements provided					
• The review of the open data legal framework prepared (yes/no) to an excellent standard	Review report/ ODWG's opinion	0	2021	Yes	Observation
• Number of produced by-laws and supporting documentation	Adopted and signed by the relevant authority	0	2021	1 by-law	Observation
Output 2.1. Interventions for open data release implemented in the public finance, health, business environment and environment sectors					
• The extent to which system for functional review of environment and public finance sectors is prepared and agreed - measured by developed methodology, trained team and prepared toolkits	The training reports, methodology and tools for functional reviews	0	2021	Developed	Observation
• Number of planning documents for open data in the environment sector prepared with agreement from all relevant authorities	Reports of the Government of Serbia and other experts' reports; sign-off from all relevant authorities	0	2021	2	Observation
• Number of high-quality interventions with at least one high-value open data set, agreed by relevant ministries	Reports of the Government of Serbia and other experts' reports; sign-off from all relevant Ministries	0	2021	2	Observation
• National Open Data Portal upgraded (yes/no) to a good standard	National Open Data Portal	No	2021	Yes	Observation

	Indicator	Means of verification				Observation
Output 2.2. Green open data: Support to Serbian Environmental Protection Agency (SEPA) through improvement of existing monitoring, reporting and data dissemination system	• Capacity building programme for LSGs developed together with SEPA representatives (yes/no)	Capacity building curriculum, Training agenda, Participation sheet, Test results	No	2021	Yes	Observation
	• Number of selected municipalities for capacity building programme piloting		0		15	
	• Total number of LSGs which participate in the capacity building programme		0		145	
	• Total number of training participants		0		200	
	• Number of implemented trainings for LSGs		0		50	
	• Final tests for the training participants pass score		0		90%	
	• Number of implemented trainings for SEPA staff	Capacity building curriculum, Training agenda, Participation sheet, Test results	0	2021	10	Observation
	• Number of trained SEPA employees		0		10	
	• Historical and current data trends on road transport emission calculated for all LSGs in Serbia (yes/no)	Data set	No	2021	Yes	Observation
	• Secondary legislation for efficient cooperation and exchange of data between SEPA and LSGs changed (yes/no)	Legislation, Information system configuration specification	No	2021	Yes	Observation
	• Established LSG reporting system (yes/no)				Yes	
	• Air emission inventory and data dissemination system/portal with GIS component established (yes/no)	Portal specification, portal URL SEPA Open Data Portal National Open Data Portal	No	2021	Yes	Observation
	• Open Data set prepared and available at the SEPA Open Data Portal and the National Open Data Portal (yes/no)		No		Yes	
	• Promotion of the intervention with SEPA implemented (developed poster for LSGs, 5 events organized, media promotion) (yes/no)	Poster design, event agenda and participation list, media clipping	No	2021	Yes	Observation

					Observation
Output 2.3. The Open Data Hub, established and operational	• Open Data Hub established (yes/no) to a good standard	Dedicated web page and branding; participants' lists, positive feedback	No	2021	Yes (65% positive)	
	• Launch event for the Open Data Hub organized				Yes	
	• Number of stakeholders using the Open Data Hub				50	
	• Percentage of female stakeholders using the Open Data Hub				35%	
	• Number of cities using the Open Data Hub				3	
	• Number of data driven solutions supported (development and incubation) at the national level contributing to at least one of the areas of intervention	National Open Data Portal, apps, tech websites	0	2021	2	Observation
	• Overall number of trainings, workshops, and networking events organized	Participation sheets, training evaluation reports	2	2021	4	Observation
	• Test results (pass/fail) from high-quality tests at end of trainings and workshops				90% pass	
Output 3.1. Raised capacities on the local level for open data release and support	• Number of municipalities creating a local open-data plan	Dedicated web page and branding	2	2021	10	Observation
	• Number of data driven solutions supported at the local level (development and incubation)	National Open Data Portal, apps, tech websites	1	2021	1	Observation

Indicators	Source				Observation
• Number of workshops on open data for capacity building of civil servants of local governments organized	Agenda, Participants lists, Grant reports, visibility materials	0	2021	1	
• Number of participants in workshops on open data for capacity building of civil servants of local governments organized and percentage providing positive feedback				30 (85% positive)	
• Percentage of participants who are women or from vulnerable groups				35%	
• Number of trainings, workshops, and networking events organized at the local level	Participation sheets, training evaluation reports	2	2021	5	Observation
• Number of participants at trainings, workshops, and networking events organized at the local level				120	
• Percentage women at trainings, workshops, and networking events organized at the local level				35%	
• Test results from participants at trainings at the local level				75%	

6   MONITORING AND EVALUATION

In accordance with UNDP's programming policies and procedures, the project will be monitored through the following monitoring and evaluation plans:

[Note: monitoring and evaluation plans should be adapted to project context, as needed]

Monitoring Plan

Monitoring Activity	Purpose	Frequency	Expected Action	Partners (if joint)	Cost (if any)
Track results progress	A detailed M&E plan will be developed in the inception phase, defining who will collect data, how, and when. Monitoring and evaluation plan will include tracking of the project impact based on Impact Assessment Study developed within the first open data project. Progress data against the results indicators in the RRF will be analysed to assess the progress of the project in achieving the agreed outputs.	Quarterly, or in the frequency required for each indicator (when defined in the M&E plan).	Slower than expected progress will be addressed by project management.		
Monitor and Manage Risk	Monitoring risk management actions using the developed risk log, including measures and plans as per UNDP's Social and Environmental Standards. Audits will be conducted in accordance with UNDP's audit policy to manage financial risk.	Quarterly	Risks are identified by project management and actions are taken to manage risk. The risk log is actively maintained to keep track of identified risks and actions taken.		
Learn	Knowledge, good practices and lessons will be captured regularly, as well as actively sourced from other projects and partners and integrated back into the project.	At least annually	Relevant lessons are captured by the project team and used to inform management decisions.		
Annual Project Quality Assurance	The quality of the first open data project has been assessed in Q1 2020. Initial quality assessment for this phase will be conducted in the inception period against UNDP's quality standards to identify project strengths and weaknesses and to inform management decision making to improve the project. Next quality assessment is scheduled for 2022.	Every two years	Areas of strength and weakness will be reviewed by project management and used to inform decisions to improve project performance.		

Review and Make Course Corrections	At least annually	Internal semi-annual project review and review of data and evidence from all monitoring actions to inform decision making.
		Performance data, risks, lessons and quality will be discussed by the project board and used to make course corrections.
Project Report	Biannually and at the end of the project (final report)	A progress report will be presented to the Project Board and key stakeholders, consisting of progress data showing the results achieved against pre-defined annual targets at the output level, the biannual project quality rating summary, an updated risk long with mitigation measures, and any evaluation or review reports prepared over the period.
Project Review (Project Board)	At least biannually	The project's governance mechanism (i.e., project board) will hold regular project reviews to assess the performance of the project and review the Multi-Year Work Plan to ensure realistic budgeting over the life of the project. In the project's final year, the Project Board shall hold an end-of project review to capture lessons learned and discuss opportunities for scaling up and to socialize project results and lessons learned with relevant audiences.
		Any quality concerns or slower than expected progress should be discussed by the project board and management actions agreed to address the issues identified.

7 MULTI-YEAR WORK PLAN [42,43]

EXPECTED OUTCOMES And baseline, indicators including annual targets	PLANNED ACTIVITIES List activity results and associated actions	Responsible Party	Funding Source	Budget Description	Total
	Output 1.1. The capacities of the Office for IT and eGovernance and the Open Data Working Group (ODWG) enhanced to coordinate and monitor implementation of open-data policies and plans	UNDP	UK GGF	National consultants	26,000.00
	Activity 1.1.1. Provide systematic technical support to the ODWG	UNDP	UK GGF	Company contracts	25,000.00
	Activity 1.1.2. Prepare and deliver capacity development to the Office for IT and eGovernment (ITE) related to open data	UNDP	UK GGF	Printing and translation	2,000.00
Outcome 1: **Enabling environment for implementation and coordination of open data initiatives created**	Activity 1.1.3. Organize National Open Data Week and create other capacity development opportunities related to open dataActivity	UNDP	UK GGF	Training, workshops and conferences	15,000.00
	1.1.4. Upgrade of the National Open Data Portal	UNDP	UK GGF	Travel	0.00
	Output 1.2. Monitoring of the status of open data legal framework delivered and inputs for improvements provided				
	Activity 1.2.1 Support the review of the legal framework related to open data	UNDP	UK GGF	Miscellaneous	6,000.00
	Activity 1.2.2. Propose and prepare required by-laws and supporting documentation	UNDP	UK GGF	Quality Assurance, Backstopping and Coordination	40,000.00
Outcome 2: **Increased effectiveness of the governance systems and institutions in planning and implementing open-**	**Output 2.1. Roadmaps prepared to implement open-data in the public finance and environment sectors**	UNDP	UK GGF	National consultants	111,000.00
	Activity 2.1.1. Define methodology for the functional review of two sectors (public finance, environment and health) in the context of open-data				
	Activity 2.1.2. Establish teams, design and deliver	UNDP	UK GGF	Company contracts	291,200.00

Outcome / Output	Activity	Agency	Donor	Budget category	Amount
data policies and priorities	training for functional reviews Activity 2.1.3. Carry out data collection (a fieldwork phase)	UNDP	UK GGF	Printing and translation	0.00
	Activity 2.1.4. Carry out analysis of the received materials and preparation of roadmaps	UNDP	UK GGF	Printing and translation	6,400.00
	Output 2.2. Green data: Support to Serbian Environmental Protection Agency through improvement of existing monitoring, reporting and data dissemination system				
	Activity 2.2.1. SEPA - LSG's – Strengthen coordination and data exchange between two entities	UNDP	UK GGF	Innovation Awards	40,000.00
	Activity 2.2.2. LSGs- Strengthened Environmental reporting system on the local level	UNDP	UK GGF	Travel	5,000.00
	Activity 2.2.3. SEPA – Air emission inventory and data dissemination system	UNDP	UK GGF	Training, workshops and conferences	84,000.00
	Activity 2.2.4. Promotion of the intervention results **Output 2.3. The Open Data Hub, established and operational**	UNDP	UK GGF	Miscellaneous	2,500.00
	Activity 2.3.1. Support design and establishment of the Open Data Hub Activity 2.3.2. Support Open Data Hub to design and implement activities for data literacy	UNDP	UK GGF	Quality Assurance, Backstopping and Coordination	50,000.00
Outcome 3: Increased public participation in local government decision-making and oversight		UNDP	UK GGF	Company contracts	0.00
	Output 3.1. Raised capacities on the local level for open data release and support Activity 3.1.1. Organize workshops on open data for local governments	UNDP	UK GGF	M&E	15,000.00
	Activity 3.1.2. Identify municipalities to participate in the open-data initiative and improve transparency Activity 3.1.3. Prepare and implement invitation for municipalities	UNDP	UK GGF	Grants	0.00
	Activity 3.1.4. Coordinate activities with Local Anti-corruption Councils	UNDP	UK GGF	National consultants	5,000.00
	Activity 3.1.5. Carry out analysis of the open-data status, especially in the core areas, at the local level and prepare plan of activities	UNDP	UK GGF	Training, workshops and conferences	15,000.00
	Activity 3.1.6. Support demand for open data at the local level	UNDP	UK GGF	Miscellaneous	2,500.00

	UNDP	UK GGF	Quality Assurance, Backstopping and Coordination	40,000.00
			SUBTOTAL DIRECT PROJECT COSTS	781,600.00
			GENERAL MANAGEMENT SERVICES (8%)	62,528.00
			TOTAL PROJECT COSTS	844,128.00
			COORDINATION LEVY (1%)	8,441.28
			TOTAL PROJECT COSTS with COORDINATION LEVY (1%)	852,569.28

8 GOVERNANCE AND MANAGEMENT ARRANGEMENTS

A **Project Board** will be formed with representatives of the UK GGF (donor), UNDP, and the Office for IT and e-Government, as illustrated in the diagram below. The Project Board is the group responsible for making management decisions by consensus for a project when guidance is required by the Project Manager, including recommendation for approval of project plans and revisions. Project Board decisions should be made in accordance to standards[44] that shall ensure best value in terms of money, fairness, integrity transparency and effective international competition. Project reviews by this group are made at designated decision points during the running of a project, or as necessary when raised by the Project Manager. This group is consulted by the Project Manager for decisions when tolerances (normally in terms of time, budget and quality) have been exceeded. It ensures that required resources are committed and arbitrates on any conflicts within the project or negotiates a solution to any problems between the project and external bodies.
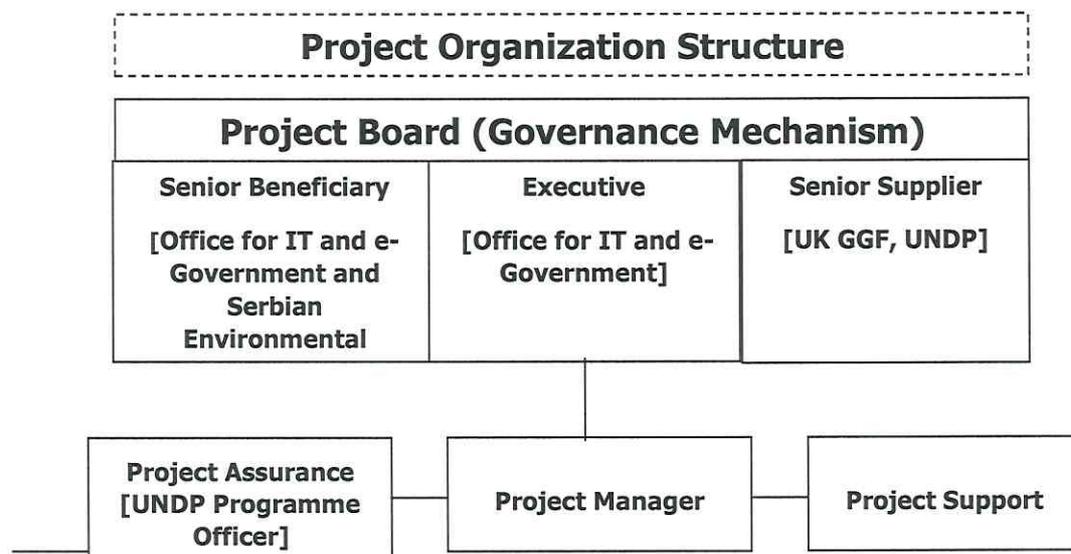
Project Board will continue with already established positive practise within the scope of the previous open data project.

Project Assurance is the responsibility of each Project Board member; however, this role will be delegated to UNDP program analyst to perform on behalf of the Project Board. The Project Assurance role supports the Project Board by carrying out objective and independent project oversight and monitoring functions. This role ensures appropriate project management milestones are managed and completed.

The **Project Manager** has the authority to run the project on a day-to-day basis on behalf of the Project Board within the constraints laid down by the Board. The Project Manager is responsible for day-to-day management and decision-making for the project. The Project Manager's prime responsibility is to ensure that the project produces the results specified in the project document, to the required standard of quality and within the specified constraints of time and cost.

The **Project Support** role provides project administration, management and technical support to the Project Manager as required by the needs of the individual project or Project Manager.

All deliverables produced during the project term, will bear the **logos of the British Embassy and UK Aid, UNDP and the Office for IT and e-Government** and, where appropriate, the standard **UNDP disclaimer** (modified to include GGF and Office for IT and e-Government disclaimers, resulting in one project disclaimer to be agreed by all parties).

Project Organization Structure

Project Board (Governance Mechanism)

Senior Beneficiary [Office for IT and e-Government and Serbian Environmental	Executive [Office for IT and e-Government]	Senior Supplier [UK GGF, UNDP]

Project Assurance [UNDP Programme Officer]	Project Manager	Project Support

[44] UNDP Financial Rules and Regulations: Chapter E, Regulation 16.05: a) The administration by executing entities or, under the harmonized operational modalities, implementing partners, of resources obtained from or through UNDP shall be carried out under their respective financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. b) Where the financial governance of an executing entity or, under the harmonized operational modalities, implementing partner, does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, that of UNDP shall apply.

9 LEGAL CONTEXT AND RISK MANAGEMENT

1. Legal Context:

Consistent with the Article III of the Standard Basic Assistance Agreement (SBAA), the responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNDP's property in the Implementing Partner's custody, rests with the Implementing Partner. To this end, the Implementing Partner shall:

a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;

b) assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of the Implementing Partner's obligations under this Project Document.

The Implementing Partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/sc/committees/1267/aq_sanctions_list.shtml. This provision must be included in all sub-contracts or sub-agreements entered into under/further to this Project Document".

2. Implementing Partner:
- ✓ Government Entity (NIM)
- ☐ UNDP (DIM)
- ☐ CSO/NGO/IGO
- ☐ UN Agency (other than UNDP)
- ☐ Global and regional projects

ANNEX: RISK LOG

Project Title: Open Data for Sustainable Development   **Award ID:**   **Date:**

#	Description	Date Identified	Type	Impact & Probability	Countermeasures / Mngt response	Owner	Submitted, updated by	Last Update	Status
1	Political instability	Project development phase	Political	P = 3 I = 2	Focus on the already set and agreed upon agenda with a possibility to make smaller amendments along the way in order to accommodate new circumstances	Project developer	Project developer		
2	Change of general political orientation against EU accession reforms	Project development phase	Political	P = 2 I = 3	Advocacy in favour of international standards; orientation towards achieving already set national strategic priorities	Project developer	Project developer		
3	Institutional weakness in implementing partner and key beneficiaries among state institutions	Project development phase	Operational	P = 2 I = 3	UNDP support services, increased networking and capacity building activities	Project developer	Project developer		

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#									
4	National implementation modality	Project development phase	Operational	P = 3 I = 3	HACT, NIM audit, regular quality assurance and spot checks	Project developer	Project developer		
5	IT development and digitalization demoted as government priority, leading to weaker government support for the work of ITE and for the project	Project development phase	Political	P = 2 I = 4	Advocacy focusing on benefits of IT development and digitalization for the administration (increased efficiency, savings, possibility to attract young and competent work force, etc.) and society (better services, increased quality of life, contribution to GDP, etc.); orientation towards achieving already set national strategic priorities	Project developer	Project developer		
6	Semi-developed community of users in civil society, business and media	Project development phase	Operational	P = 3 I = 3	Intensified capacity building and networking activities through the Open Data Hub	Project developer	Project developer		
7	Continual staff turnover in government institutions	Project Development phase	Operational	P = 4 I = 3	Focusing on already established partnerships, sustainable trainings with follow up	Project developer	Project developer		

					activities and tools for building institutional memory, vertical communication, commitments and plans for cooperation set in institutional internal documents and institutional strategies	Project developer	
8	Increased threat to privacy due to more data being available to wider community and possible malpractices around it	Project Development phase	Operational	P = 3 I = 3	Capacity building for good practises around data management by the responsible bodies, guidelines for good data practices ensuring privacy protection disseminated to responsible bodies, data anonymisation prior to release	Project developer	