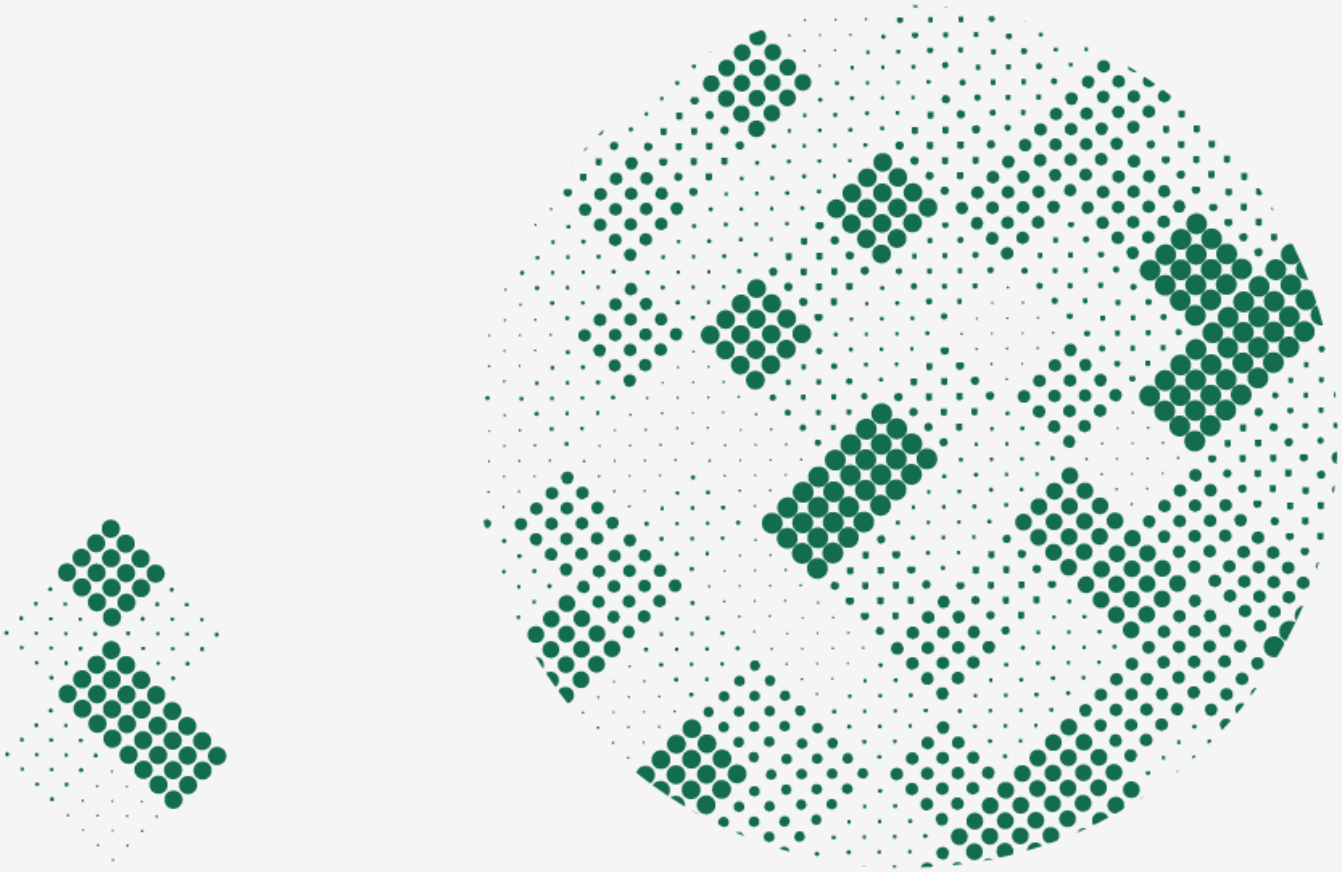
RESPONSIBLE RESEARCH AND INNOVATION IN TERRITORIES

RRI LEADERS

Task 2.2.
Territorial report – Sofia Municipality

(documentary analysis and participatory workshop report)



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Task 2.2.

Territorial report – Sofia Municipality (documentary analysis and participatory workshop report)

Deliverable leader	Partner 2 - UNIVERSITY OF WESTERN MACEDONIA
Lead author	Snezhina Gabova (Sofia Development Association), Marko Hajdinjak (ARD Fund), Zoya Damianova (ARD Fund)
Contributors	Svetlana Lomeva (Sofia Development Association)
Editors	
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P4	THE CATALAN FOUNDATION FOR RESEARCH AND INNOVATION	FUNDACIO CATALANA PER A LA RECERCA I LA INNOVACIO	FCRi
P5	ZURICH UNIVERSITY OF APPLIED SCIENCES	ZURCHER HOCHSCHULE FUR ANGEWANDTE WISSENSCHAFTEN	ZHAW
P6	REGIONAL ASSOCIATION OF LOCAL GOVERNMENT OF WESTERN MACEDONIA	PERIFEREIAKI ENOSI DIMON DYTIKIS MAKEDONIAS	LGA-WM
P7	SOFIA DEVELOPMENT ASSOCIATION	АСОЦИАЦИЯ ЗА РАЗВИТИЕ НА СОФИЯ (ASSOTSIATSIA ZA RAZVITIE NA SOFIA)	SDA
P8	MUNICIPALITY OF THALWIL	GEMEINDE THALWIL	THA
P9	ECONOMIC DEVELOPMENT AGENCY OF SABADELL CITY COUNCIL	PROMOCIO ECONOMICA DE SABADELL	PES SL

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List of acronyms / abbreviations used in this document

AIRR – Anticipation, Inclusiveness, Reflexivity, Responsiveness
BPOS – Bulgarian Portal for Open Science
DTSS – Digital Transformation Strategy for Sofia
EC – European Commission
ESIF – European Structural and Investment Funds
FAIR – Findable, Accessible, Interoperable, Re-usable
ICT – Information and communication technologies
IS3 – Innovation Strategy for Smart Specialisation
MC – Monitoring Committee for monitoring and evaluation of the innovative potential of Sofia
NGO – Non-governmental organisation
R&I – Research and innovation
RRI – Responsible Research and Innovation
SM – Sofia Municipality
STEM – science, technology, engineering and mathematics
SYS – Sofia Youth Strategy

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Introduction

This document consists of four main parts:

1. Methodological overview with a brief outline of the main RRI-AIRR definitions and concepts.
2. Documentary analysis of the relevant national-level legislation, strategies and programmes related to RRI.
3. Documentary analysis of the territorial legislation and local strategies and programmes focused on the four selected policy area of the Sofia Municipality (support for innovations, digital transition and new skills, youth employment and entrepreneurship, and sustainable urban development).
4. Summary of discussions from the participatory workshop on mapping of RRI systems discourse in the involved territories – an event with participation of relevant territorial stakeholders.

The concluding part offers some reflections and findings regarding the embeddedness of RRI-AIRR approach in the territorial policies with a particular focus on the chosen policy areas.

This report completes the preparatory mapping of the territorial context regarding the embeddedness of the RRI keys in policy and strategic framework documents at Sofia Municipality. The first two steps of the mapping included semi-structured interviews and a focus group. Twenty-six interviews were conducted with representatives from municipal and state administration, non-governmental organisations, research and academia, as well as the business sector. The interview questionnaires were adapted to the policy topics chosen by the Sofia Municipality. The findings of the interviews were subsequently summarised per quadruple helix model: research and academia, policy-makers, NGOs, and business. Following the interviews, a focus group was held with representatives of various organisations. Participants pointed out many important issues regarding the compatibility of the RRI framework and the AIRR dimensions with the objectives and actions envisaged in the strategies and actions plans for the selected policy areas in Sofia. The findings from interviews and focus group are presented in "Deliverable 2.1: Map on stakeholder relationships and interdependencies and report on stakeholder's need, interest, power and influence."

The current document supplements these findings with an analysis of relevant national and municipal documents, and the inputs from a participatory workshop with experts from all stakeholder groups. The workshop participants discussed opportunities for integrating RRI-AIRR approach in the four policy areas for Sofia Municipality: 1) support for innovations, 2) digital transition and new skills, 3) youth employment and entrepreneurship, and 4) sustainable urban development.

The aim of the report is to establish the extent to which long-term strategic planning in Sofia Municipality supports a self-sustaining R&I ecosystem, characterised by a high degree of openness and responsiveness to local needs, an inclusive approach towards all stakeholders, ongoing assessment and monitoring for quality assurance of the policy and practical measures being undertaken.

The report highlights important differences in the four policy areas, which can be put down to both internal drivers of change (i.e. the appointment of a deputy mayor for digitalisation), as well as external factors, such as the new national political and policy priorities, ESIF funding mechanisms, etc. The report concludes that policy-specific objectives in the said policy areas need to be better aligned with overarching priorities for long-term urban development. The RRI-AIRR approach is largely embedded in the reviewed documents even though it is not explicitly described as a leading approach for strategy development, implementation and evaluation.

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Methodology

The first two parts of the report are based on desk research and analysis of the existing policy documents at the national and at the Sofia Municipality level. The analysis of the national documents examines if, and if yes how, the RRI thematic keys and AIRR dimensions are reflected in the documents. The analysis of the municipal documents is divided into four subsections, one for each of the four policy areas. The third part of the report summarises the discussions from the participatory workshop held in July 2021.

The report includes recommendations to local policy- and decision-makers on how to identify opportunities/policy areas for integration of the RRI-AIRR approach in future municipal policy-making and strategy development.

The following **national-level documents** are examined:

- National Plan for Development of the Open Science Initiative in the Republic of Bulgaria
- National Strategy for Development of Scientific Research in the Republic of Bulgaria 2017-2030
- National Roadmap for Research Infrastructure 2017-2023
- Innovation Strategy for Smart Specialisation
- Strategy for Effective Implementation of Information and Communication Technologies in Education and Science in the Republic of Bulgaria (2014-2020)
- Act on Development of the Academic Staff in the Republic of Bulgaria
- Scientific Research Promotion Act
- Higher Education Act
- Law on Equality between Women and Men
- Law for Protection against Discrimination

The following **municipal documents** are reviewed:

- Innovation Strategy for Smart Specialisation of Sofia
- Digital Transformation Strategy for Sofia
- Sofia Youth Strategy 2017-2027
- Vision for Sofia 2050
- Programme for Sofia 2021-2027

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RRI and AIRR Definitions

The **RRI policy framework** of the European Commission includes **five thematic keys**: research ethics, public engagement, science education, gender equality, and open access.

- **Public Engagement** is about bringing together researchers, policy-makers, industry and civil society organisations and NGOs, as well as citizens, to deliberate on matters of science and technology.
- **Gender Equality** is about fostering gender balance in research teams, ensuring gender balance in decision-making in research, and integrating gender dimension in research and innovation content.
- **Open Access** is about making research findings available free of charge for readers.
- **Science Education** is about making science more attractive to young people (STEM – science, technology, engineering and mathematics) as well as teaching and learning of science to non-scientists, such as school children, college students, or adults within the general public.
- **Ethics** is about conducting research in such a way that allows others to have confidence and trust in the methods and findings of research.

AIRR Dimensions

- **Anticipatory governance** is focused on harnessing the collective intelligence and wisdom of collaborating organisations and citizens from a given territory (city, region or state) to address strategic risks while at the same time capitalises on emerging opportunities so as to meet the set policy goals of the said territory.[1] Anticipation approaches include foresight, technology assessment, horizon scanning, scenarios, vision assessment, etc.
- **Inclusiveness** deals with the integration of perspectives from a wide range of societal actors (including non-organised and non-institutionalised citizens and community groups) and their involvement in multi-stage co-creation processes in a wide range of policy areas.
- **Reflexive governance** implies encouraging reflection about societal circumstances in order to reassess practices and adjust initiatives.[2]
- **Responsive and accountable governance** places societal needs in the focus of plans and actions of public leadership and governance, and as well engages society in the processes of policy design and decision-making, as well as policy implementation, monitoring and evaluation. It further develops institutions, structures, systems and practices that promote the involvement and participation of the people and ensure equal access to services by all.[3]

RRI keys and the AIRR dimensions jointly form the RRI-AIRR approach.

[1] Jose Ramos (Action Foresight), Ida Uusikyla and Nguyen Tuan Luong (UNDP Viet Nam) (2020). *Anticipatory Governance — A Primer*. Posted on February 18, 2020 at https://www.vn.undp.org/content/vietnam/en/home/blog/AnticipatoryGovernance.html.

[2] Peter H. Feindt & Sabine Weiland (2018). 'Reflexive governance: exploring the concept and assessing its critical potential for sustainable development.' Introduction to the special issue, *Journal of Environmental Policy & Planning*, 20:6, 661-674, DOI: 10.1080/1523908X.2018.1532562.

[3] Department of Economic and Social Affairs – United Nations (2015). *Responsive and Accountable Public Governance. 2015 World Public Sector Report*. Publication ST/ESA/PAD/SER.E/187, accessible at https://publicadministration.un.org/publications/content/PDFs/World%20Public%20Sector%20Report2015.pdf.

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Documentary Analysis of National Strategic Documents

RRI keys and AIRR dimensions reflected in the National Plan for Development of the Open Science Initiative: open access and inclusiveness.

The *National Plan for Development of the Open Science Initiative in the Republic of Bulgaria*[4] was approved by the Ministry of Education and Science in December 2020, and became effective in January 2021. All participants in the national research ecosystem are required to implement the priorities and objectives of the Plan. The Plan sets out the strategic goals, the necessary steps and tools for making open science a standard research-conducting practice in Bulgaria. The envisaged measures include the active involvement of the Bulgarian scientific community and the research-funding organisations in self-archiving in digital repositories and distribution/communication of research findings; development of the Bulgarian Portal for Open Science (https://bpos.bg); creation of new institutional repositories for data and publications in line with the FAIR principles; and connection of Bulgarian resources with the European cloud for open science. The main aim of the Open Science Initiative is to enable the access of Bulgarian researchers and the society to scientific publications reviewed by independent experts, reliable research data and results in an open and non-discriminatory manner at the earliest possible stage of dissemination, as well as to provide an opportunity for their use and reuse. The open access will further improve the transparency and accountability of public funding for research in Bulgaria.

One of the main objectives of the Plan is development of the Bulgarian Portal (Cloud) for Open Science (BPOS) as a building block of the Open Science Initiative. The BPOS will coordinate the dissemination of open-access scientific results from publicly-funded research and enable fast and easy sharing of publications and other digital research outputs, thus strengthening the communication and collaboration between scientists.

RRI keys and AIRR dimensions reflected in the National Strategy for Development of Scientific Research: ethics, open access, gender equality and inclusiveness.

The *National Strategy for Development of Scientific Research in the Republic of Bulgaria 2017-2030*[5] was launched in June 2017. Its main objectives are to transform Bulgaria into an attractive centre for cutting-edge scientific research and development of new technologies, to motivate young scientists to remain in the country, to increase the responsibility of Bulgarian science towards the society and vice versa, and to guarantee large-scale, fast and long-term development and modernisation of the research system. The Strategy envisages three stages for the development of the Bulgarian research system: recovery stage (2017-2022), stage of accelerated development (2023-2026), and stage of research on a global level (2027-2030).

The Strategy does not refer to RRI framework, but pays attention to the issue of the social impact of scientific research, which is related to the RRI principles. It highlights that scientific research needs to be beneficial for the society. It also includes specific measures aiming at science education for society, and the application of the open science principles. The Strategy has an objective to increase the number of researchers to typical for the EU levels and achieve a balanced distribution by age, gender, scientific areas and geographical regions. While the intention to achieve gender balance and attract young scientists is clearly expressed, other diversity aspects

[4] https://www.mon.bg/upload/24848/plan-otvorena-nauka_130121.pdf
[5] https://www.mon.bg/upload/6527/SStrategy_2030_BG.pdf

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such as increasing the participation of underrepresented groups (ethnic and religious minorities, people with disabilities, immigrants) are absent.

The Strategy encourages dialogue among academic circles, society and business for achieving and maintaining the high quality of research, developing new research areas, and improving the quality of life. This is to be achieved through integration of the components of the knowledge triangle (education-science-business) as a basis for development of the knowledge-based economy and attaining sustainable, intelligent growth.

The Strategy intends to restore confidence in the research system through openness and transparency in all actions and procedures in accordance with common European standards and best practices. Measures to this end include declaration of potential conflicts of interest, publicity of research findings and accountability to society.

RRI keys and AIRR dimensions reflected in the National Roadmap for Research Infrastructure: open access and inclusiveness.

The major policy instrument for the implementation of the National Strategy for Development of Scientific Research is the *National Roadmap for Research Infrastructure 2020-2027*[6] (developed by the Ministry of Education and Science, the latest update published in 2020). The Roadmap presents the state of the national research infrastructures and provides a mid-term strategy for integrating them with the Pan-European research infrastructure. All research infrastructure complexes included in the National Roadmap are entitled to state funding (23 research infrastructure objects are financially supported in 2017-2023 period). The Roadmap is regularly revised and updated (first published in 2010, updates in 2014, 2017 and 2020), and the research activity of research infrastructure complexes is evaluated every two years by an international peer review panel. The assessment criteria, which include elements of RRI-AIRR approach are the access policy and data management plan (transparent policy for access to the infrastructure, including international access activities, conditions for provision of access, and data management issues), relations between partners of the infrastructure and its integration in the international research infrastructure.

RRI keys and AIRR dimensions reflected in the Innovation Strategy for Smart Specialisation: public engagement, inclusiveness, responsiveness and reflexivity.

The *Innovation Strategy for Smart Specialisation* (IS3) was initially adopted in 2014 and updated consecutively in 2015, 2017 and 2018.[7] IS3 analyses the capacity for innovation and research performance in Bulgaria, identifies priority areas for enhancement of the competitiveness of the Bulgarian RDI system and describes the aims, the thematic areas and basic activities to be supported by the Strategy. The document contains a financial plan for its implementation, which outlines the policies, policy instruments and main funding sources. The IS3 aims at resolving some of the main long-term obstacles faced by the national research and innovation system, such as the lack of sufficient funding for R&D and the weak link between business and science.

The development of IS3 was a good example of employing the principles of public engagement and inclusiveness. Consultations with participation of important stakeholders from academia, business, territorial

[6] https://naukamon.eu/wp-content/uploads/2021/06/RoadMapBulgaria_2020-2027_EN-1.pdf
[7] https://www.mi.government.bg/files/useruploads/files/innovations/ris3_18.12.2018_bulgarian.pdf

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governments, NGOs and experts were held in all six Bulgarian regions (NUTSII level), and their input was used to finalise the document, which was then adopted by the Council of Ministers and the National Parliament in fall 2017. The adoption of the IS3 contributed towards better efficiency of the utilisation of innovation and science policies and funding mechanisms with the establishment of the Council for Smart Growth. The Council coordinates policy implementation in the national innovation system (education, science, innovations, ICT) and the implementation of IS3. This step is clearly related to the principles of responsiveness and reflexivity.

The Innovation Strategy for Smart Specialisation also tries to open up the innovation policy development process to diverse voices and combine the power of ideas and knowledge from different actors to co-create new products and find solutions to societal needs.

RRI keys and AIRR dimensions reflected in the Strategy for Effective Implementation of Information and Communication Technologies in Education and Science: science education and open access.

Strategy for Effective Implementation of Information and Communication Technologies in Education and Science in the Republic of Bulgaria (2014-2020)[8] aims at modernisation of education, science and innovation through the means of ICT. To this end, integrated digital governance should be introduced in all fields of education and science, resulting in automation of the administrative work of scholars and teachers, and development of publicly accessible and standardised electronic content. In this respect, the Strategy is linked to the science education and open access keys.

RRI keys and AIRR dimensions reflected in the Act on Development of the Academic Staff: ethics and responsiveness.

The ethics aspects of RRI are most directly applied in the *Act on Development of the Academic Staff in the Republic of Bulgaria*,[9] adopted in 2010 and amended in May 2018. The most important ethics-related amendments proscribe the rules and terms for establishment and operation of the Academic Ethics Committee. The Committee, established by the Minister of Education and Science, shall examine "the alerts concerning violations in the procedures for awarding academic degrees or academic positions, as well as signals for plagiarism in the dissertation papers and the papers submitted for assessment, the lack of credence of the presented scientific data, and the conflict of interest in the forming of the scientific panels' membership" (Art. 30a).

The amendments that enabled the establishment of the Academic Ethics Committee represent an example of responsive and adaptive action of the Ministry of Education and Science, which reacted to several high-profile cases of academic dishonesty and took necessary measures in order to intervene appropriately in possible future cases.

[8] https://www.strategy.bg/StrategicDocuments/View.aspx?Id=904
[9] https://www.mon.bg/upload/21464/act_on_development_acadStaff_022019.pdf

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RRI keys and AIRR dimensions reflected in the Scientific Research Promotion Act: ethics, open access, and inclusiveness.

The *Scientific Research Promotion Act*[10] requires ethical principles like honesty, reliability, respect and accountability to be at the core of the ethical system of the national science policy. A desirable ethical practice is thus expected to frame issues in a fair or non-biased way as part of the public communication of science, and to ensure full transparency and accountability of research activities and research outcomes. Art.3 of the Scientific Research Promotion Act reads: *"Research activity is based on principles of ethics, transparency, publicity, accessibility and applicability."*

The Scientific Research Promotion Act creates conditions for effective collaboration between science and industry through instruments for joint and integrated action. The document also stipulates financial support for research activities, which are aimed at establishment of structures that bridge the cooperation of universities, scientific organisations and business.

RRI keys and AIRR dimensions reflected in the Higher Education Act: ethics.

The *Higher Education Act*[11] (promulgated in 1995) also addresses the ethical issues. While Art.55, par.3, reads that *"Members of the academic staff in higher education institutions have the right to freely conduct, according to their interest, scientific research and to publish the results from their work",* Art.56, par.1, item 2 puts forth certain ethical boundaries to this research freedom, by requiring the academic staff to *"observe scientific and professional ethics."*

RRI keys and AIRR dimensions reflected in the Law on Equal Opportunities for Women and Men and the Law for Protection against Discrimination: gender equality.

Law on Equal Opportunities for Women and Men[12] defines the national policy on gender equality as based on the principles of equal opportunities in all spheres of public, economic and political life, and balanced representation of both genders on all levels. Gender equality is also addressed in the *Law for Protection against Discrimination*,[13] promulgated in 2005, which prohibits any form of discrimination based on gender, among other grounds (Art.4), and obliges the employers to give preferences to perform a given job or occupy a given position to persons of a less represented gender or ethnic group (Art. 24).

[10] https://www.fni.bg/sites/default/files/documents/6_2016/ZAKON%20ZA%20NASARChAVANE%20NA%20NAUChNITE%20IZSLEDVANIYA.pdf
[11] http://lll.mon.bg/uploaded_files/zkn_visseto_obr_01.03.2016_EN.pdf
[12] https://www.lex.bg/bg/laws/ldoc/2136803101
[13] https://www.legislationline.org/documents/id/20676

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Documentary Analysis of Municipal Strategic Documents

a) Policy Area "Digital Transition and New Skills"

Sofia Municipality adopted its first digital transition strategy in 2020. The *Digital Transformation Strategy for Sofia* (DTSS)[14] is the result of Sofia's participation in the Digital Cities Challenge (2018-2019), an initiative of the European Commission (EC) that aims to help cities in the EU achieve sustainable economic growth through the introduction and use of high technology in all aspects of public life. In January 2020, the municipal council voted the creation of a new department for Digitalisation, Innovation and Economic Development, headed by a Deputy Mayor, which is tasked with the management, implementation and monitoring of the DTSS.

The vision of DTSS reads as follows: "Sofia systematically achieves sustainable economic growth and develops a high value-added economy through the introduction and use of high technology in all areas of public and economic life. Sofia develops as an innovative, intelligent, modern, progressive and high-tech city, an attractive centre and a preferred place for living, business and R&D. To achieve this, the city actively interacts and develops solutions together with various stakeholders at local, national and international levels." DTSS steps upon the scope of digitalisation set forth by the Innovation Strategy for Smart Specialisation of Sofia (IS3), which provides guidance for the operational objectives identified in the DTSS.

A draft roadmap outlining particular projects that are to be implemented in the next three years is elaborated as part of the strategy. Among the topics addressed in the document is the development of an e-platform for schools which seeks to improve the electronic communication between teachers, parents, and students; the creation of a new digital platform for contracts and public tenders, aimed to improve the control over municipal public procurement; a platform for communication with citizens. DTSS also envisions the creation of a digital twin of the city, using real-time data to develop urban policies and a new integrated mobility platform. The strategy implementation relies on the participation of the business and citizens, Sofia Investment Agency and local stakeholders.

RRI keys reflected in the DTSS

- **Public engagement:** DTSS calls for a participatory governance model, based on the alliance of many stakeholders. As stated in the document, since DTSS draws upon the IS3, which itself follows a Quintuple Helix model, "it is important to have all five stakeholder groups represented in the DTSS governance: industry, academia, administration, users (groups and organisations, representing the citizens), experts in sustainable development of the environment and use of natural resources" (DTSS, 30). Stakeholder and user engagement is a critical part of DTSS implementation and includes information exchange and communication; engagement / participation / collaboration / (co)-production; participatory decision-making; and open governance. Key stakeholders relevant to the domains of the DTSS involved in its implementation are representatives of the start-up ecosystem, government, utilities and transport, through an advisory board and/or working groups coordinated by the Digitalisation, Innovation and Economic Development department (Innovative Sofia) of the municipality.

[14] https://innovativesofia.bg/en/strategies-and-policies/

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- **Science education**: Operational objective OO3.5 specifically aims to encourage university education that develops the fields of science, technology, engineering and mathematics (STEM), interdisciplinary engineering and informatics, as well as entrepreneurship.
- **Open data, access to data and open source software** are listed as prerequisites for the implementation of the DTSS.

AIRR dimensions reflected in the DTSS

To ensure wide stakeholder **engagement, inclusiveness, responsive and accountable governance**, a special advisory council to the Deputy Mayor for Digitalisation, Innovation and Economic Development was established, the so-called Digital Board (DTSS, 31). DTSS states that user engagement, implementation of participatory models of governance, creation of collaborative ecosystems, and optimisation of user behaviour are the real objectives of technologies, open data management and digital transition in Sofia Municipality.

Recommendations regarding the inclusion of RRI and AIRR in the policy area "Digital Transition and New Skills"

1. Include gender dimensions/gender equality linked to digital transition, transformative technologies, digitalisation; DTSS currently does not mention gender and has no specific measures for promoting gender equality.
2. No considerations of ethics, including research ethics and ethical issues linked to digital transition are mentioned; ethical issues (also linked to use of AI, public e-services, etc.) are critical for a just digital transition and provide an overarching framework for broad stakeholder engagement in the development and implementation of the strategy.
3. More detailed measures related to AIRR, in particular, anticipatory governance, inclusiveness (also as linked to gender equality) should be included.

b) Policy Area "Support for Innovation"

The *Innovation Strategy for Smart Specialisation of Sofia* (IS3)[15] aims at adapting the national specialisation strategy of Bulgaria to the economic and social dynamics of Sofia and the establishment of Sofia as a Smart City. IS3 supports the corporate sector by stimulating the creation of better conditions for synergy and partnership in the innovation ecosystem and by the effective use of ICT. The IS3 objectives focus on (a) capacity building and market access, including support for building a centre of excellence in both the ICT and the creative industries; attracting leading investors to invest in R&D; development of ICT scientific and innovation infrastructure; effective implementation of ICT products in all spheres of social and economic life; promotion of international collaboration through attracting doctoral students from outside of EU; organisation of international conferences and forums, and (b) financial capital, establishment of new mechanisms for incubation and financing (particularly in the early stages), and facilitating foreign investments and venture capital opportunities in Sofia. The Strategy was adopted by the Municipal Council in 2016.

[15] https://www.sofia.bg/documents/20182/448750/ISIS_Sofia.pdf/f51fcd5a-2973-4679-89fe-62b3dccb6662 (in Bulgarian)

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The policy aims to strengthen **the innovation ecosystem in the city and the region**. Two thematic areas for smart specialisation are in focus, which are also part of the national IS3, namely: **Informatics and ICT, and New technologies in the creative and recreative industries** (IS3, 5). The document identifies as main components of the innovation ecosystem in Sofia human capital, saturation and access to the market, financial capital, digital technologies, good regulatory environment and good governance. Science education is strongly emphasised as key to cultivating highly-skilled human capital.

RRI keys reflected in the IS3

The IS3 is based on a quintuple helix model. In the process of developing the ISSS of Sofia, the following guiding principles have been observed (IS3, 14-15):

- Integrated approach
- Partnership and teamwork
- Coherence and coordination
- Publicity, transparency and citizen participation
- Ethics, integrity and protection of public interest

AIRR dimensions reflected in IS3

To achieve the goals and objectives of the strategy, Sofia plans to implement innovative and **user-oriented models of good governance** related to the provision of better, cheaper and time- and resources-saving services. Futuristic research - **forecasting future trends and developing scenarios for impact,** tracking the development of innovative technologies in the field of ICT, cultural and creative industries through partnerships among academic institutions, municipal administration, independent creative sector – are also set as goals.

Monitoring and evaluation are in the hands of a Monitoring Committee, which reports to the Mayor of Sofia Municipality (IS3, 53-56). The Committee is comprised of international and Bulgarian experts – researchers and entrepreneurs in the field of innovation, education and science. The MC works in cooperation with the two consultative councils at the Mayor's Office: the Expert Council on Science, Technology and Innovation and the Advisory Council on Economic Policy and Finance. The MC has monitoring and evaluation functions, and oversees the IS3 implementation according to a set of performance indicators.

Action Plans for the IS3 are developed, which identify major partners, as well as sources of funding, deadlines, responsible persons and an indicative budget for the strategy's implementation. Sofia Development Association is one of the parties responsible for the implementation of the annual IS3 action plans.

Recommendations regarding the inclusion of RRI and AIRR in the policy area "Support for Innovation"

The IS3 does not explicitly refer to questions of **gender equality, ethics/research ethics, responsibility**. This is considered a shortcoming and should be taken into account in drafting the annual action plans for the IS3 implementation in the next document revision cycle. Although not specifically mentioned, AIRR dimensions linked to **anticipatory, responsive, reflexive and accountable governance** are embedded in the document. It is recommended to redefine the ongoing implementation, monitoring and evaluation measures and the role of the Monitoring Committee in light of the AIRR dimensions; the key performance indicators could be revised to reflect more fully those principles as well.

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c) Policy Area "Youth Employment and Entrepreneurship"

The *Sofia Youth Strategy 2017-2027* (SYS)[16] was adopted by the municipal council in 2016. The document promotes a vision of the city of Sofia as a modern European capital with a rich historical and cultural heritage, contemporary and dynamic cultural life, with a major role in the development of the region and the country. The Strategy calls for transforming Sofia into a city of the young, the active and the innovative. The main objectives of the SYS are to provide young people in Sofia with skills for lifelong learning, competences for development, prosperity and autonomy, and active social participation in the public decision-making process. SYS supports youth organisations, youth services and youth workers, as well as informal groupings of young people; and connects them with stakeholders to plan and implement activities and programmes that are relevant to the interests, needs and experiences of youth in Sofia.

RRI keys reflected in the SYS

The following principles, which are similar to the RRI keys, were followed in drafting the Strategy:

- Civic participation through a broad consultation process: all stakeholders have the opportunity to participate in the consultations on the preparation of the Strategy;
- Transparency: the opinions expressed by the participants in the consultations are publicly available, documented and archived;
- Expertise: the Strategy draws upon relevant research and analysis of local needs and international practices.

Three of the Strategy's operational objectives are linked to **access to open data, inclusiveness and engagement**, and (science) **education**. Operational objective 1.2 focuses on "Improving the access to information through digital technologies; improving access to open data and connectivity in public spaces; more active information policy towards young people from the municipal bodies." Objective 2.1 emphasises "continuing education and youth entrepreneurship, informal and non-formal learning; youth career development; youth innovations, youth social innovations."

AIRR dimensions reflected in the SYS

As concerns the AIRR dimensions, the following objectives and measures of SYS are relevant. Operational goal 1.1, Including young people in policy- and decision-making at local level, directly relates to **inclusiveness and responsive governance.** The concrete measure for achieving the goal is the establishment of an Advisory Council for Youth Policies with the Mayor of Sofia Municipality. The Council's role is to improve the institutional framework for the inclusion of young people in the policy-making process; strengthening the dialogue between Sofia municipality and local youth organisations in the implementation of sectoral policies; fostering partnerships, consultations and dialogue with young people across the territory of the municipality. The Youth Advisory Council is tasked with the collection and analysis of information regarding the implementation of the municipal youth strategy. The Council holds joint sessions with municipal councillors and the city administration to discuss ideas and measures for the implementation of the municipal youth policies.

[16] https://www.sofia.bg/documents/20182/448750/Strategy_young_people-SO-2017-2027.pdf/8186ee54-8135-42e0-bfa2-17dd2b281742 (in Bulgarian)

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The SYS also supports **self-governance** of youth organisations and youth work, for example, Operational goal 1.3, Fostering youth activism – through youth self-governance, youth work, informal education, organisations of young people, inclusiveness and promotion of democratic values. The main principles for implementation of the Youth Strategy include:

- Participation and inclusion of young people, including youth with fewer opportunities
- Compliance with legislative and regulatory frameworks
- Transparency
- Equality
- Multi-sectoral approach.

Reflexive and accountable governance: The Strategy implementation is assessed each year in an annual monitoring report.

Recommendations regarding the inclusion of RRI and AIRR in the policy area "Youth Employment and Entrepreneurship"

The SYS does not focus on **gender equality, ethics, responsibility, or science education**. These issues need to be reflected in a revised version of the SYS, also in light of new EU initiatives, such as the Next Generation EU.

d) Policy Area "Sustainable Urban Development"

Vision for Sofia 2050[17] is an initiative of Sofia Municipality to create a shared and long-term strategy for the development of the capital and suburban areas until 2050. During 2016 and 2017 many public discussions were held, with representatives of political parties, non-governmental organisations, businesses, entrepreneurs, researchers and citizens. At the end of 2019, the final version of the *Vision* was elaborated, proposing 24 long-term goals, nearly 250 steps and 385 specific measures, which have the ambition to make Sofia a better city to live. The *Vision* was developed by SofiaPlan, a municipal unit tasked with research, analysis, and development of long-term spatial and strategic planning for sustainable urban development (SofiaPlan is included in the list of good practices from Sofia, see *Mapping report for Sofia and stakeholder profiles).*

Programme for Sofia is the main document which will translate the broader framework of the *Vision* into an Integrated Municipal Development Plan 2021-2027. The strategic document will define the medium-term goals and priorities for the city's future. As with the *Vision*, the *Programme* is based on a comprehensive analysis of multiple aspects of urban development (economy, demographic profile, metropolitan area and neighbouring cities; housing, public utilities and services; energy; transport; healthcare; education, culture and cultural heritage; social services; ecology and environment). The *Programme* is a continuation of the Municipal Development Plan (MDP) and the Integrated Plan for Urban Reconstruction and Development (IPGVR) of Sofia Municipality for the period 2014-2020. The new *Programme* was prepared in accordance with the requirements of the Regional Development Act (RDA), the Regulations for its implementation (RDPR) and the Methodological guidelines for development and implementation of integrated development plans of the municipality for the

[17] https://vizia.sofia.bg/vision-sofia-2050/

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period 2021-2027, approved by the Ministry of Regional Development and Public Works. The Programme for Sofia is expected to be voted by the Municipal Council by the end of 2021.

The priorities of the *Programme* derive from the *Vision* and are in line with current European, national and local strategic documents. The following strategic goal for the development of the city is set: Sofia Municipality is a more adaptable, sustainable, inclusive and diverse municipality, focused on the knowledge economy and offering a better quality of life in a cleaner environment. Three strategic goals are defined, which outline the main perspectives for urban development, covering five main priorities for financial investments and use of resources; as well as 14 specific objectives. **They cover all five of the RRI keys and most of the AIRR dimensions.**

Strategic goal 1: More sustainable development and improved connectivity

The strategic goal focuses on the sustainable development of the municipality and the opportunities for improving its connectivity and technical infrastructure through environmentally friendly, intelligent and cost-effective solutions. It integrates policies in the environmental, economic and technical infrastructure sectors, and complementary activities supporting their implementation.

Strategic goal 2: Increasing the competitiveness of the municipality and developing the knowledge economy.

The goal focuses on the development of a more competitive local economy based on innovation, increased efficiency of SMEs and a sustainable increase in the share of employment in sectors with high added value and export potential. **This goal focuses also on the optimisation and reorganisation of the administrative processes in the municipality, in order to improve strategic planning, development and social inclusion** (in line with the main AIRR principles).

Special attention is paid to education, as a means to decreasing social inequalities, facilitating individual professional and personal realisation, and increasing of the quality of life. The main thematic areas that fall into the focus of action are:

- support for innovation:
- attracting investment and new jobs in high value-added sectors;
- strengthening cooperation between science and business;
- accelerating digitisation;
- transformation of city administrative processes;
- introduction of shared administrative e-services;
- improved opportunities for professional qualification and retraining;
- lifelong learning and adult literacy.

Strategic goal 3: More developed social and cultural environment

The strategic goal focuses on the development of Sofia Municipality as a diverse, authentic, vital, social and inclusive community. Measures and activities are envisaged to ensure balanced territorial development while reducing social inequalities and improving the social inclusion of vulnerable groups and minorities. The strategic goal combines social, urban, cultural and economic policies in a coherent system, which aims in an integrated and sustainable way to permanently improve the quality of life in the city and municipality.

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AIRR dimensions reflected in the Programme for Sofia

As mentioned above, the full cycle of developing first the *Vision for Sofia 2050* and now the *Programme for Sofia*, relies on **broad public engagement, inclusiveness, foresight scenarios, transparent and accountable governance.** The same principles are foundational also for the Programme's implementation, as can be seen from the draft versions of the document.

The *Programme* will be the main source for drafting the transformative outlook for Sofia.

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Report from the Participatory Workshop in Sofia

The participatory workshop was held in Sofia on July 15, 2021, with 23 participants representing academia and research institutes, the private sector, civil society organisations and local authorities. The workshop started with an introduction to the findings from the fieldwork (interviews, focus group) conducted in the first semester of 2021 on the application of RRI-AIRR approach at municipal level, as well as from the documentary analysis of national and municipal documents and policies linked to the four policy areas, chosen by Sofia Municipality: sustainable urban development, digital transition and new skills, support for innovation, and youth employment and entrepreneurship. Following the initial discussions, participants were divided into four groups, corresponding to the four policy areas to discuss practices, opportunities and ideas about the integration of RRI-AIRR approach in these policies.

Group 1: Policy area "Sustainable urban development"

Group 2: Policy area "Digital transition and new skills"

Group 3: Policy area "Support for innovation"

Group 4: Policy area "Youth employment and entrepreneurship"

Discussions in each group were structured around a pre-defined questionnaire which included questions about the current status of municipal policy-making and integration of RRI keys; main actors/stakeholders which could positively influence the integration of RRI-AIRR approach in future policies; specific policy objectives/measures for the integration of RRI-AIRR approach in each policy area; general recommendations for future implementation of RRI-AIRR approach in territorial governance. The workshop concluded with a plenary session during which each group presented the main results of the group discussions. In what follows, the main points of the discussions per policy area are summarised.

1. Policy Area "Sustainable Urban Development"

Participants in this group discussed the barriers and drivers for integrating the RRI-AIRR approach in policies related to sustainable urban development. Besides the prevailing hierarchical top-down model of communication within the municipal administration and the administration and residents/stakeholders, participants noted as a barrier also an overall lack of understanding of innovation in municipal governance. According to them, there seems to be a certain fear and resistance in the administration with regard to (primarily) technological innovations in the organisation of work. Participants also agreed that at this point, the systematic integration of RRI-AIRR approach in municipal policies is promoted by individual experts rather than administrative units in the municipality.

With respect to **public engagement**, "more public events for idea generation / idea incubator on policy issues and urban development with mixed audiences" are needed. The constructive communication between the city, the local ecosystem and the citizens is crucial. Such collaboration between the Sofia municipality and the local stakeholders could work on a reciprocal basis – businesses and the local community could support initiatives of Sofia Municipality (SM), and vice versa – the municipality could be a partner in initiatives launched by the local innovation ecosystem.

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On the issue of **data and open access**, the opinion was that there are problems both with data collection and the way data are processed and made accessible. Datasets are not regularly updated and access requires top-down authorisation, which prevents the coordination within the administrative units as well as between the city administration and external organisations (also such which could provide data to the municipality). The lack of reliable, well-structured, networked data makes difficult the process of setting realistic, achievable indicators for policy implementation.

Regarding the implementation of the **AIRR** dimensions, participants noted that the administration does not always succeed to communicate to the public the results and achievements of policy implementation. Furthermore, critical analysis of project results and lessons learned are not systematically taken up in self-assessment and review procedures. As one participant noted, the administration is yet to accept that "findings which show that society is not prepared for [public debate] on a certain topic or issue could be an important result for future policy-making."

In light of the above, the following proposals for improving the relations/cooperation between key actors and stakeholders were made:

- encourage the municipal administration to seek external expertise and to cooperate with universities and research institutes. Universities and academia are recognised as important stakeholders with the capacity to influence the uptake of RRI and research results, which are relevant to policy-makers;
- introduce new procedures facilitating horizontal communication between stakeholders, actors and the municipality on matters of RRI in policy-making;
- provide support for applied research and policy-related studies to serve policy-making;
- improving the soft skills of the administration to navigate the terrain of RRI and to cooperate more effectively with academia, the private sector and civil society.

Participants also favoured a more active role of SofiaLab, which is a living urban lab for innovations, coordinated by Sofia Development Association. Initiatives of the Lab complement the activities of the Sandbox for Innovative Solutions of Innovative Sofia, part of the Plan for the Implementation of the Digital Transformation Strategy for Sofia. However, the operational and financial resources at municipal level are insufficient for expanding and building a complete infrastructure for a living laboratory, so it is key that different collaboration options are discussed with the local ecosystem and, possibly, with EU/international partners.

2. Policy Area "Youth Employment and Entrepreneurship"

Discussions in this group concluded that all RRI principles are relevant to the policies for supporting youth employment and entrepreneurship – especially public engagement, open access to information and transparency/accountability. Young people will respond to available programmes and opportunities if they have the information and are actively encouraged to take part. The current Strategy for Young People in Sofia Municipality 2017-2027 underlines the need to support youth employment and entrepreneurship in Sofia.

In terms of barriers to RRI, participants pointed out the lack of resources: funding and time.

The problems related to communication of science and scientific facts/findings/results are among the most important barriers. These problems have many aspects. One of them is that stakeholders speak different

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languages – scientists and researchers have their own professional jargon, the public administration uses bureaucratic language, and the society needs information presented in a popular and accessible vocabulary. This miscommunication creates distrust and scepticism.

A 2015-research revealed that in Bulgaria, the share of young people inclined to become entrepreneurs is twice smaller than in most of the EU countries. One of the reasons is the insufficient state support for young entrepreneurs and start-up companies. On the other hand, the education system also neglects the entrepreneurial and business skills, and does not develop skills like critical thinking and resourcefulness. Another problem is the passivity of the young people which do not take initiative but prefer more traditional paths for career development.

Participants identified several groups which could influence the process of policy-making: young people themselves; student and consultative councils at universities and secondary schools; non-governmental organisations established by the young or working with topics important for the young people; business clusters and associations. Good examples of cooperation between stakeholder organisations and the municipality include the Advisory Council for Youth Policies at the Mayor's office; cooperation agreements of the University of National and World Economy with business organisations and clubs to provide training, internships and other opportunities to their students.

Strategic measures

Providing accurate and reliable information is crucial; the information also needs to be provided through multiple channels, so that it can reach wide and diverse audiences. It is also very important to properly "translate" the information and use the language and style appropriate for the different target audiences.

Communication and presentation of good practices and examples are very important for encouraging youth entrepreneurship. Successful entrepreneurs, which typically grab the media spotlight in Sofia/Bulgaria, are adult males, while female and young entrepreneurs, or entrepreneurs belonging to ethnic minorities, rarely attract media or public attention. Apart from the media, NGOs and municipal government could also do more to change this and showcase the good examples of young and female entrepreneurs.

In terms of concrete measures, the participants agreed that more meetings, events, and workshops have to be organised, gathering interested parties together – science, business and society. It was pointed out that financial support, e.g., through the Municipal Guarantee Fund for SMEs, is critical for promoting entrepreneurship and supporting the innovation ecosystem of Sofia. The Fund provides loan guarantees for SMEs who have an economically sound project but cannot secure sufficient bankable collateral. In 2018 the Fund launched a new guarantee scheme – Financing Innovative Start-ups Programme. The Programme gives special benefits to projects of female entrepreneurs, as well as projects of persons up to 35 years and over 50 years of age.

Another possible way to support young entrepreneurs could be realised in cooperation with universities. Students could be given tasks such as developing business plans or designing urban development projects, which would earn them credits in their studies. Currently, internship opportunities in business companies are still relatively rare, and when they exist, they are not implemented in the best way that would use the potential of the young interns to the full.

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3. Policy Area "Support for Innovation"

Discussions in this group overall confirmed the conclusions from the interviews and the focus group conducted in May 2021. Participants agreed that RRI-AIRR approach are not well integrated in current municipal policies. Policy- and decision-makers need to be more active and adopt the results of research and outputs of various projects, implemented by Sofia Municipality or in which the municipality has been a partner. Overall, initiatives in support of innovation (be it technological or social innovation) seem to be driven by external factors rather than the result of consistent efforts and long-term vision of the municipal government. The current innovation policy of Sofia Municipality is rather broadly formulated and more concrete objectives need to be set, in order to boost the innovation ecosystem and smart specialisation on the territory of Sofia.

Participants in this group also emphasised the need to improve the communication between the municipality, citizens, academia and the business sector in the preparation and implementation of policies. With regard to academia, Sofia Municipality should support innovation through commissioned studies and research (the results of which can feed into municipal policies); public procurement procedures can be revised and adapted to include provisions in support of RRI, thus increasing the role of the municipality as both a leader and end user of scientific innovations.

The potential of citizen science is not fully exploited, although this could be a source of important data and expertise, as well as a means to engage more groups in society in science education. Currently, many initiatives (in science education) take place at grassroots level but are not well communicated to the city administration and the opportunity to capitalise on the experience and outcomes is therefore missed. One example given in this respect concerns a project studying urban heat islands, implemented in cooperation with Sofia University; the results of the project could be very valuable for the municipal programme for climate change mitigation. Overall, the municipal administration is seen as having a leading role in providing a strategic framework for studies and research linked to urban development, as a source of funding for such research, as well as a key actor in enforcing the national and EU regulations and legislation in the field of innovation.

With respect to public engagement, participants noted that the interests of vulnerable groups and of people with disabilities are still not fully addressed in policy-making. Public consultations have to involve these groups to ensure that policy priorities respond to their needs and comply with EU regulations; for example, by 2022 all public services need to be adapted to the needs of people with hearing problems.

Whereas various initiatives are implemented to support technological innovations and start-ups, less attention is paid to innovations in the public sector. Innovation in the public sector comprises the integration of already implemented innovations or new knowledge in order to improve current or put into use new processes, services and practices, the goal and visible result of which is the improvement of public services and quality of life, or a main aspect of public services within the territory concerned.

Participants perceive the role of the Sofia Municipality as follows: as a contracting authority of innovation projects, as an initiator of innovation and as a policy-maker in support of innovation. Being innovator (public-sector innovations) in itself is considered as the main role of the Sofia Municipality because only then it will be able to develop and support the other two areas. Sofia Municipality should support local innovations where there is no funding from national operational programmes. To overcome piecemeal working, the participants were of the opinion that RRI-AIRR approach could become an integrator and should be integrated at every level of governance within the Sofia Municipality.

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In terms of concrete measures related to the policy area, the participants proposed the organisation of forums for promoting innovations, giving more visibility to pilot initiatives, and improving the communication and engagement with citizens, including through an online platform. This is considered an opportune time for launching such a platform since we are just at the beginning of the 2021-2027 programming period of the EU.

4. Policy Area "Digital Transition and New Skills"

Similar to the discussions in the other groups, participants emphasised that a main objective of digital transition in the municipality should be to ensure that the needs of all citizens are considered, with special attention paid to people with disabilities. This concerns in particular e-services and access to those services; the municipal administration should plan and carry out information campaigns targeting citizens and people with special needs. In this respect, the municipality is encouraged to partner with organisations, representing the interests of these groups and to use their expertise in designing the services. Another recommendation was to revise the rules for public procurement and to include provisions that guarantee the needs of these groups are respected (when it comes to the design, implementation, and evaluation of public services).

In terms of the implementation of the new Digital Transition Strategy for Sofia (DTSS), approved by the municipal council in 2020, participants agreed that the new municipal department dedicated to Digitalisation, Innovation and Economic Development (Innovative Sofia) is a unit with strong expertise and has so far succeeded in accomplishing the objectives set in the DTSS. As potential risks participants noted the allocation of sufficient funds in the municipal budget needed for the implementation of DTSS; a long chain of decision-making and dependence on many units and administrations within the Sofia Municipality, which slows down the work. Lack of public awareness of the objectives of DTSS is another issue which calls for more active public information campaigns.

According to the participants, the city administration needs to become more responsive, to develop future scenarios linked to the impact of transformative technologies, and overall, to improve its capacity for anticipatory governance. With regard to public engagement and citizen participation, one of the proposals was for the creation of an integrated platform for citizen participation and communication, which includes digital tools and also enables data processing of information from citizens and/or businesses. Such a platform will boost the role of the city as a market creator for local companies.

Regarding data policy, data access and open data, discussions focused on the following points: in line with the DTSS, the city needs to prepare and implement a comprehensive data policy, with guidelines for standardisation, processing, sharing, and data security in the municipal administration. The policy should also include procedures for opening appropriate datasets and providing access for citizens and businesses to them. A data policy would allow for standardised dissemination of information and open data to the public as well as for internal data sharing amongst municipal departments.

As key actors for including the RRI-AIRR approach in policy-making, participants consider Sofia Municipality (the Innovative Sofia unit), representatives of the local ICT ecosystem, other municipal units, e.g. SofiaPlan as well as stakeholders from the local smart-city ecosystem, research/academia and businesses.

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Summary remarks

Overall, discussions in the workshop groups confirm the conclusions drawn from the interviews, the first focus group and the analysis of the national and local policy documents (see above). The workshop participants agreed that the RRI keys and AIRR dimensions are largely known and followed by the municipal administration (in policy-making and policy implementation) even though they are not formally set in internal documents or procedural codes. Secondly, the participants also agreed that a systematic scientific and research approach in the policy-making process is currently missing (with a few exceptions).

In terms of open access to data, participants noted various administrative, technical, and organisational issues, including lack of standardised procedures for validating data supplied by citizens and external organisations. In principle, the current hierarchical model of governance and decision-making is an obstacle to a more effective communication and cooperation between the municipality and local stakeholders.

Regarding the process of intra-municipal communication and management, participants see the need for a process where "bottom-up initiatives and ideas of the administrative staff can more easily find their way to the leadership of the municipal department/city" in order to achieve a transparent, responsive and accountable governance. The municipal administration and leadership are to set an example by becoming "early adopters of research/innovation results regarding public administration innovations."

When it comes to public engagement and inclusion, the participants' opinions clustered around two main positions: first, there is need for more public discussions and dialogue between public bodies, the private sector and civil society in support of transparent policy-making, and second, more efforts are needed to give voice to all citizens, in particular to underrepresented groups and people with special needs. As a public service provider, the municipality needs to base its policies and actions on research and data coming from academia, research institutes and the business, in order to improve the access to public services for all residents. In this respect, workshop participants also noted that the procedures for public procurement at municipal level need to be reorganised to allow for better alignment with the principles of RRI-AIRR approach. In terms of monitoring policy implementation, participants argued that "social and economic impact policy assessment (besides ecological impact) for sustainable urban development" need to be introduced.

Finally, it was also proposed that the municipal administration adopt good practices from other countries, specifically aimed to improve the integration of RRI-AIRR approach in territorial governance.

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Conclusions

As the analysis of documents and the feedback from participants in the project activities show, the framework of the RRI-AIRR approach is generally recognised as important in the policy- and decision-making process, even though it may not be formally described in operational guidelines and procedures. Some of the strategic documents and policies, at both the national and the municipal level, explicitly mention RRI keys such as public engagement, open access, and science education as necessary for policy implementation and evaluation; others do not refer to any of the RRI thematic keys and AIRR dimensions.

Overall, the current policy priorities and strategic goals set by the municipal administration in the reviewed policy areas (sustainable urban development, digital transition, youth employment and entrepreneurship, support for innovations) only partially reflect the RRI-AIRR approach. This conclusion was confirmed also in discussions during the participatory workshop. While correspondence to national and EU-level policy objectives is pursued, not much emphasis is placed on transforming territorial development through the sustained application of the RRI-AIRR approach at all stages of the policy-making cycle – from baseline analysis to implementation and impact assessment. These shortcomings in the policy-making process reflect deeper issues with the overall administrative set-up of the municipal departments, including inefficient communication and heavy decision-making procedures, which are not conducive to a comprehensive transformation in the leadership and governance models of the municipality. In this respect, the RRI-LEADERS project is a valuable opportunity to trigger much-needed change and to improve the administrative and institutional capacity of Sofia Municipality to deal with strategic risks and leverage emerging prospects for meeting urban development goals.

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